# Airfield Research Group Ltd

## ARG Research Note No.10: Watch Office with Meteorological Section – an Historical Appraisal

Paul Francis – March 2012

## Contents

Part 1: Methodology and Notes on Sources 4

Part 2: Watch Office with Meteorological Section – A Family History 6

Part 3: Permanent Designs 11

Part 4: Temporary Designs 18

Part 5: Ibsley 52

Appendix 1: Summary of Permanent Watch Office with Meteorological Section Buildings 63

Appendix 2: Summary of Temporary Watch Office with Meteorological Section Buildings 64

Appendix 3: New Non-Dispersed Operational & Bomber OTU Stations Planned in 1940 (Transition from Peacetime to War) 65

Appendix 4: New Dispersed Operational & OTU Stations Planned in 1940 / 1941 66

Appendix 5: Examples of Watch Office with Met Section 518/40 in England 67

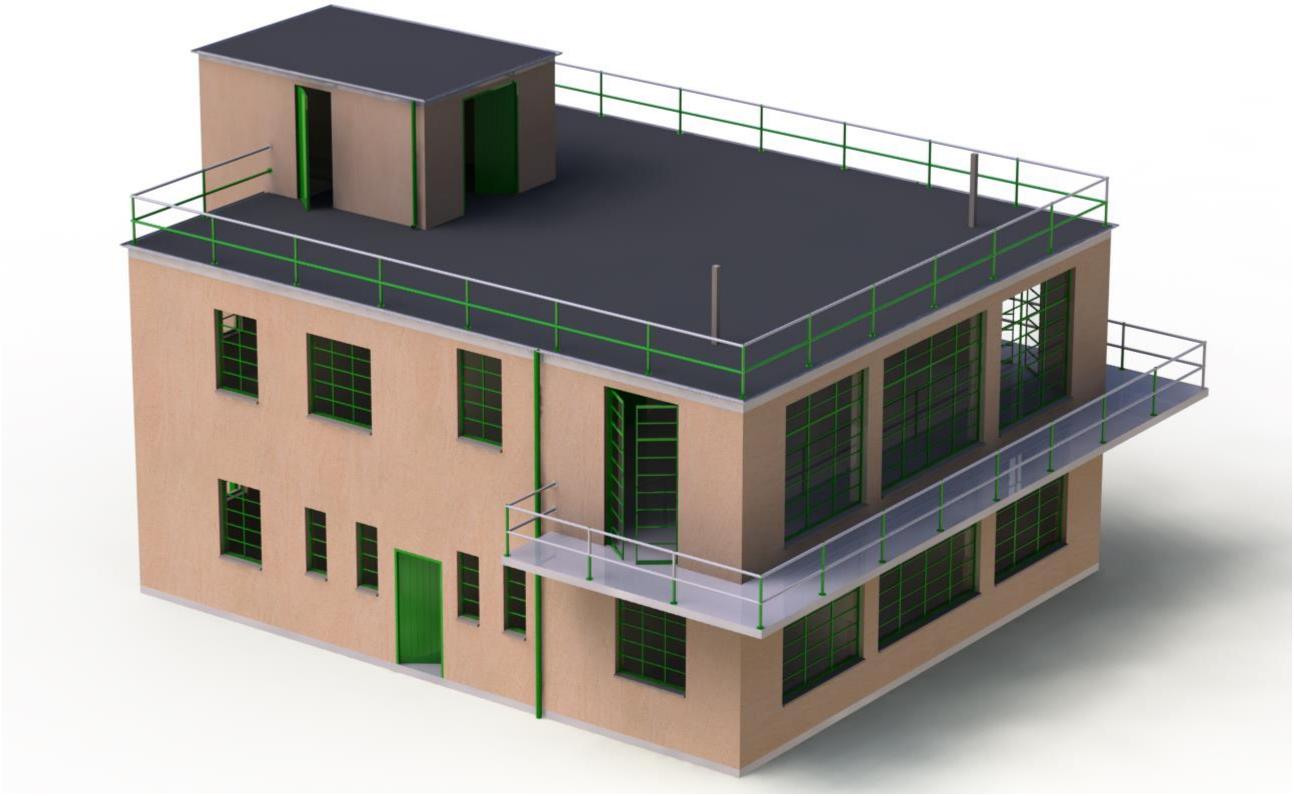
## Acknowledgements

Richard Flagg
Roly Errington
Chris Lowe
Steve Hurst

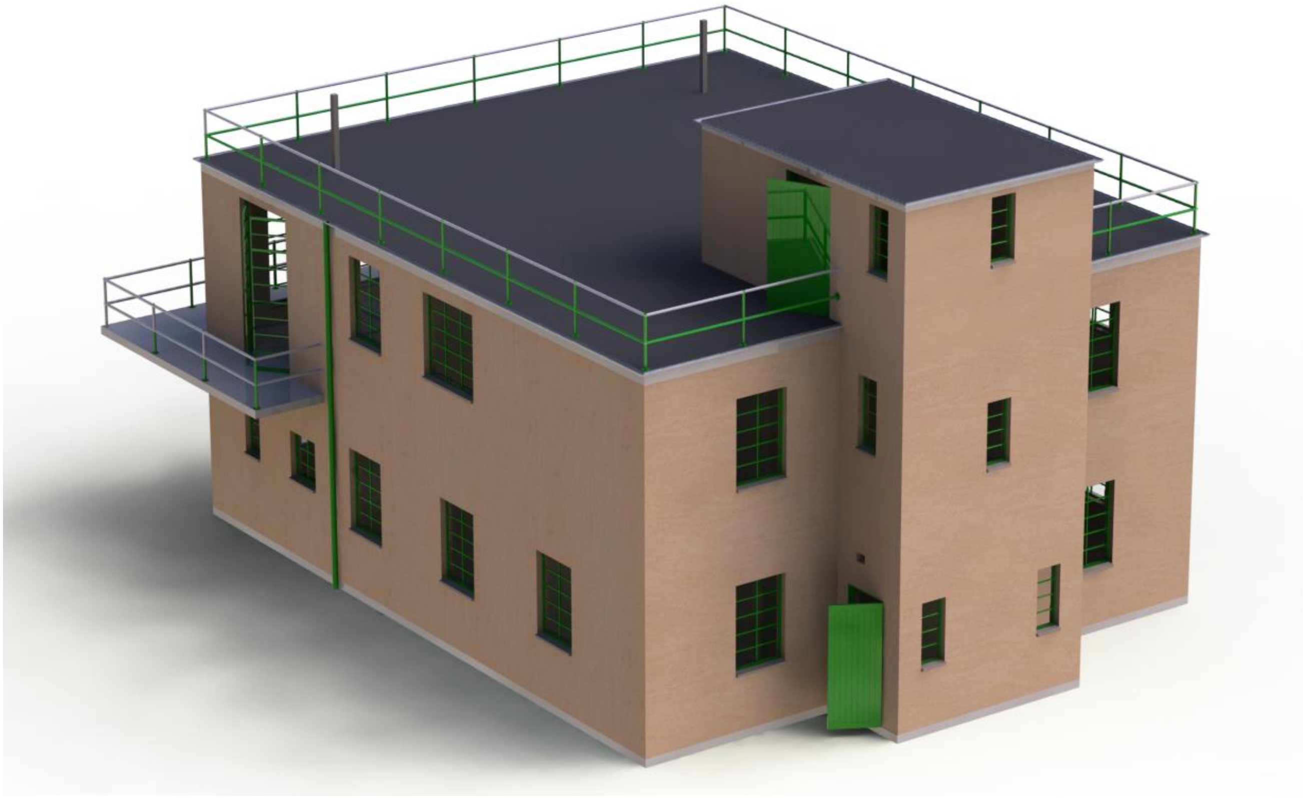
## Copyright Statement

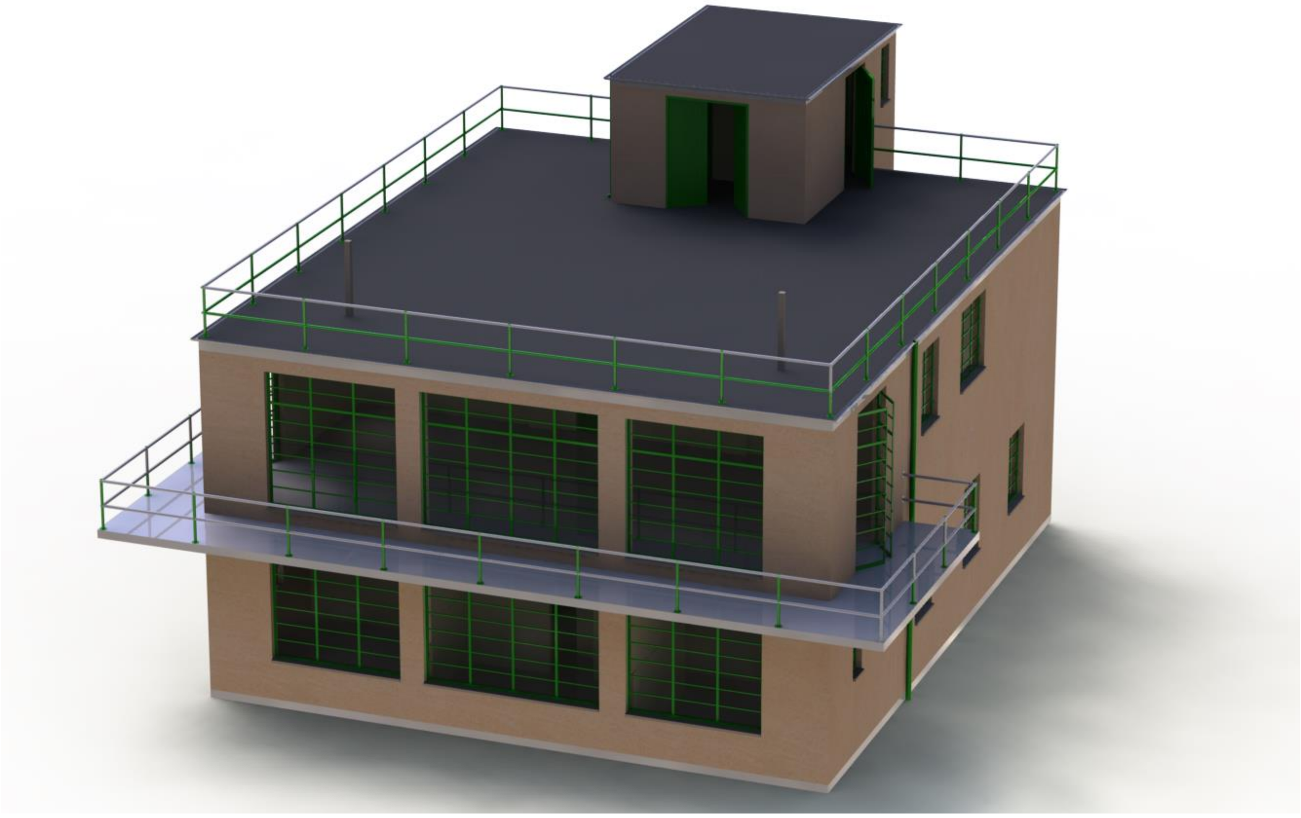
Paul Francis is the recognised author of this work 2012

Front Cover: Plate 1: Ibsley watch Office with meteorological section 518/40

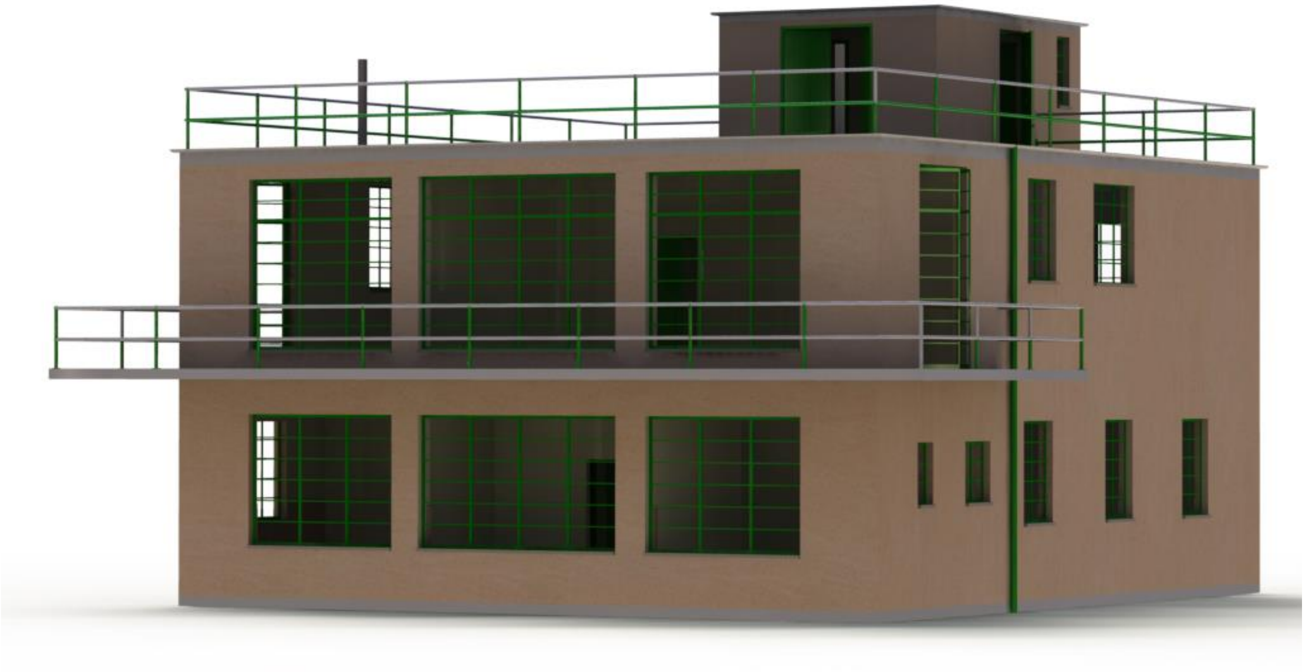


Plates 2 & 3: CGI of 518/40 watch office with meteorological section (Chris Lowe)





Plates 4 & 5: CGI of 518/40 watch office with meteorological section (Chris Lowe)



## Part 1: Methodology and Notes on Sources

This report is primarily concerned with the temporary brick watch office with meteorological section to Air Ministry drawing number 518/40. This particular building type is the last in a series of structures originally designed in 1939 as part of the last of the pre-war RAF expansion schemes that had been approved by Parliament just prior to the outbreak of WWII. The report therefore begins with the pre-war designs and describes how these differ from the temporary wartime versions of 1940 to 1942. Despite the original drawing having a date of 1940, many buildings were actually built between 1941 and 1942. The last examples differing very slightly from the earlier versions built on the first phase of non-dispersed austerity stations such as Polebrook and Chipping Warden. Another characteristic of these stations is the presence of a single type ‘J’ hangar, which were later supplemented by type T2 hangars. The second phase austerity stations mainly had Bellman aeroplane sheds but the last stations built with the 518/40 watch office had T2 hangars which had by then replaced the Bellman shed as the standard RAF transportable hangar. Interestingly, both Ibsley and Harrowbeer started out as satellite fighter stations that were upgraded to parent station and consequently these airfields originally had a satellite fighter station watch office which was replaced by a 518/40 building.

Under a dedicated section (part 4) that examines the 518/40 generic design, three buildings (Bovingdon, Shipdham and Wymeswold) in England were visited, they were externally and internally inspected, photographed and notes were prepared on their differences and common characteristics. This was then compared with the building at Ibsley. All four structures were derelict and one has since been demolished (I presume). There are 23 buildings of this type (518/40) extant in the UK, 15 of which are in England.

The building at Ibsley was measured using a Leica Distometer, the dimensions obtained have been compared with the original Air Ministry drawing.

The only records relating to the watch office with meteorological section in national archives appear to be the general arrangement drawings 2328/39, 5945/39 and 518/40.

In support of this report is a set of CAD drawings and 3D computer generated imagery plus a CD of images.

## Note

It is unlikely but very difficult to prove (as 31 out of 54 buildings have been demolished) that there were any buildings constructed solely to drawing 518/40[1] (having a timber roof, floor and staircase) and that it is more likely that all buildings actually built were based on one or more amendment drawings. It is known that all surviving buildings except for Ibsley have a composite arrangement at first floor level of concrete and timber plus a concrete staircase.

Despite the fact that it was only designed as a temporary structure the basic design appears to be very sound and the type did not require any structural modifications or extensions until after the war.

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[1] It is not possible to rely on airfield record site plans for the answer as these are unreliable

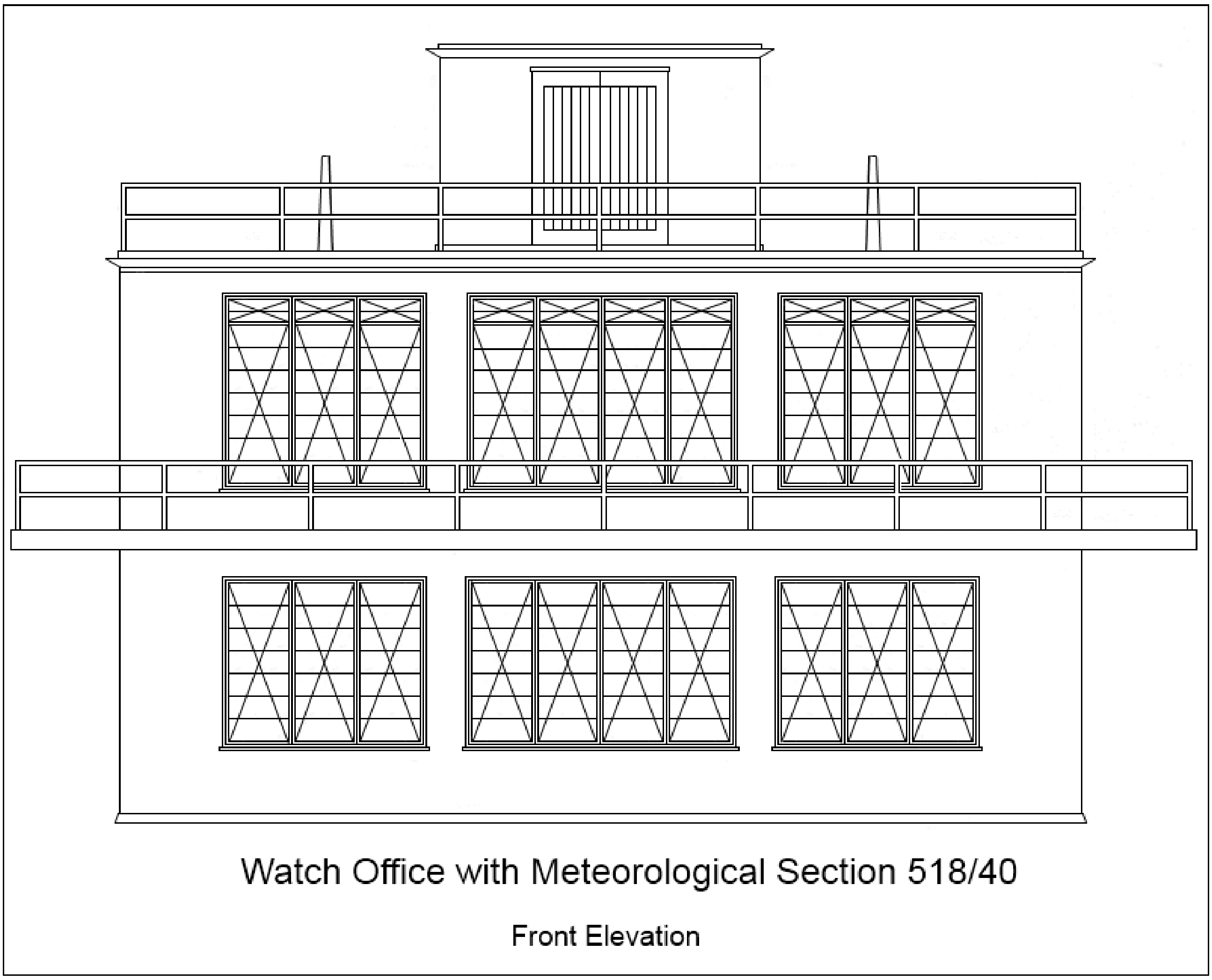


Plate 6: Front elevation

## Part 2: Watch Office with Meteorological Section – A Family History

### 2.1 In the Beginning

The watch office with meteorological section group of buildings is the fourth generation Air Ministry type design for a military building used for air traffic control purposes. The three previous designs were as follows:

(A) 1072/26 and 2072/26

The first purpose-built watch office design consists of two versions; one for fighter (1072/26) and the other for bomber stations (2072/26). The fighter version consists of a lobby, rest room, locker room, pilots' room and watch office for duty pilot with bay window; it has a rectangular-shaped plan-form and has external walls of 11 in cavity brick with a steel-framed pitched roof of slate or asbestos tiles. The building at Northolt is Listed Grade 2.

The smaller bomber version consists of square-shaped building in plan with external brick cavity 11 in walls and a pitched roof. Its internal arrangement consisted of a lobby, lavatory, rest room and an office for the duty pilot with a bay window. No examples are listed.

(B) 1934/34, 2062/34 and 207/36

The watch office with tower was the first two-storey Air Ministry building for air traffic control; its external appearance is similar to a child's fort leading to its unofficial designation as 'Fort Type'.

There were three versions, the first and second (1959/34 and 2062/34) are both part of the RAF Expansion Scheme 'A' of 1934. The first floor has external walls of 15 in cavity brick and a roof of reinforced concrete slab. Rooms are lobby, officer's lavatory, airmen's lavatory, rest room and watch office. On a fighter station, it remains single storey (2062/34) but for all other stations, a tower was built above a pair of structural roof beams. The tower section is actually one and half stories, the lower part being a store room and above this is the control room. External walls are 11 in cavity brick. Access to the control room is from the lobby via a spiral staircase. Bicester is Listed Grade 2.

The final version of the watch office with tower, is a monolithic concrete version (207/36), designed under RAF expansion Scheme 'C' of 1936. Details are similar to the brick version except the walls of the complete structure are 10 in of reinforced concrete. No concrete versions are listed.

(C) 5740/36

RAF Flying Training Schools had a larger watch office with tower, though its official title is chief flying instructor's block. It was designed as part of RAF Scheme 'C' and originally consisted of a brick-built single-storey ground floor building with two-storey tower but, almost immediately another storey was added to the wings on either side of the tower. Its dual function is to house the offices of the chief flying instructor and to function as a watch office. No buildings are listed.

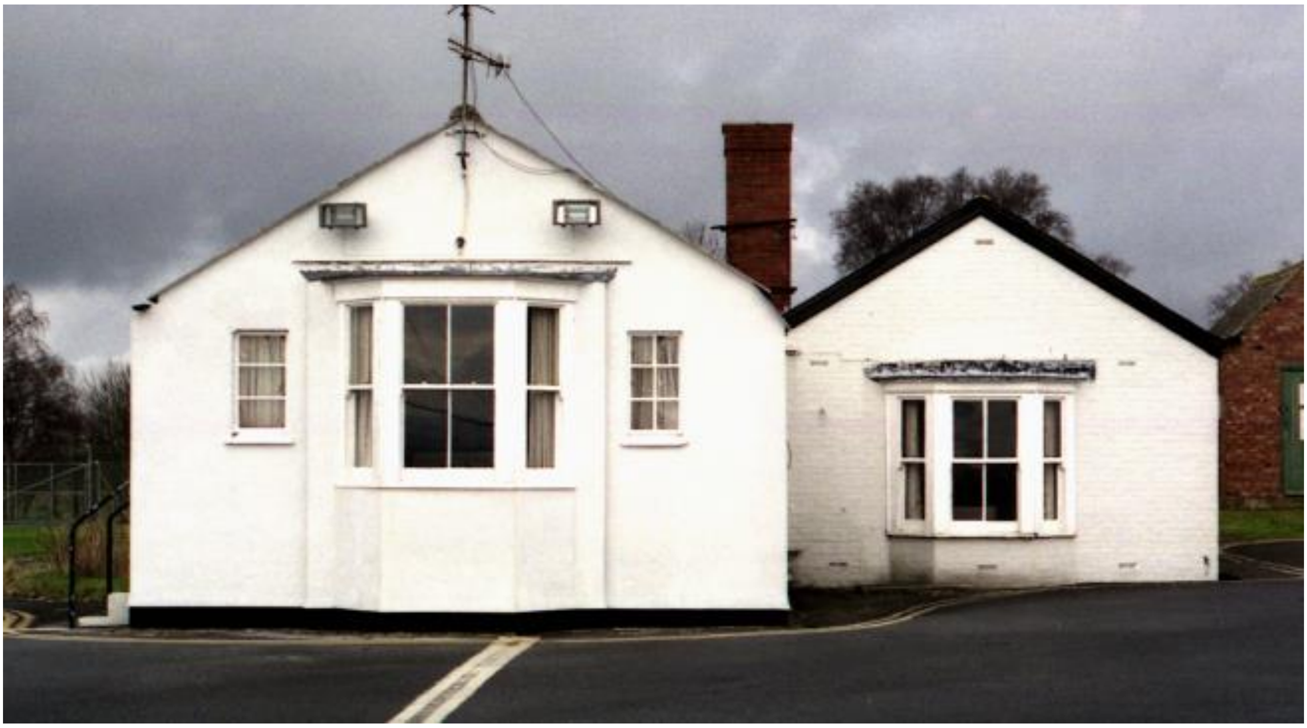


Plate 7: Upavon watch office 2072/26 (the original building is the one on the right) (23-09-94)

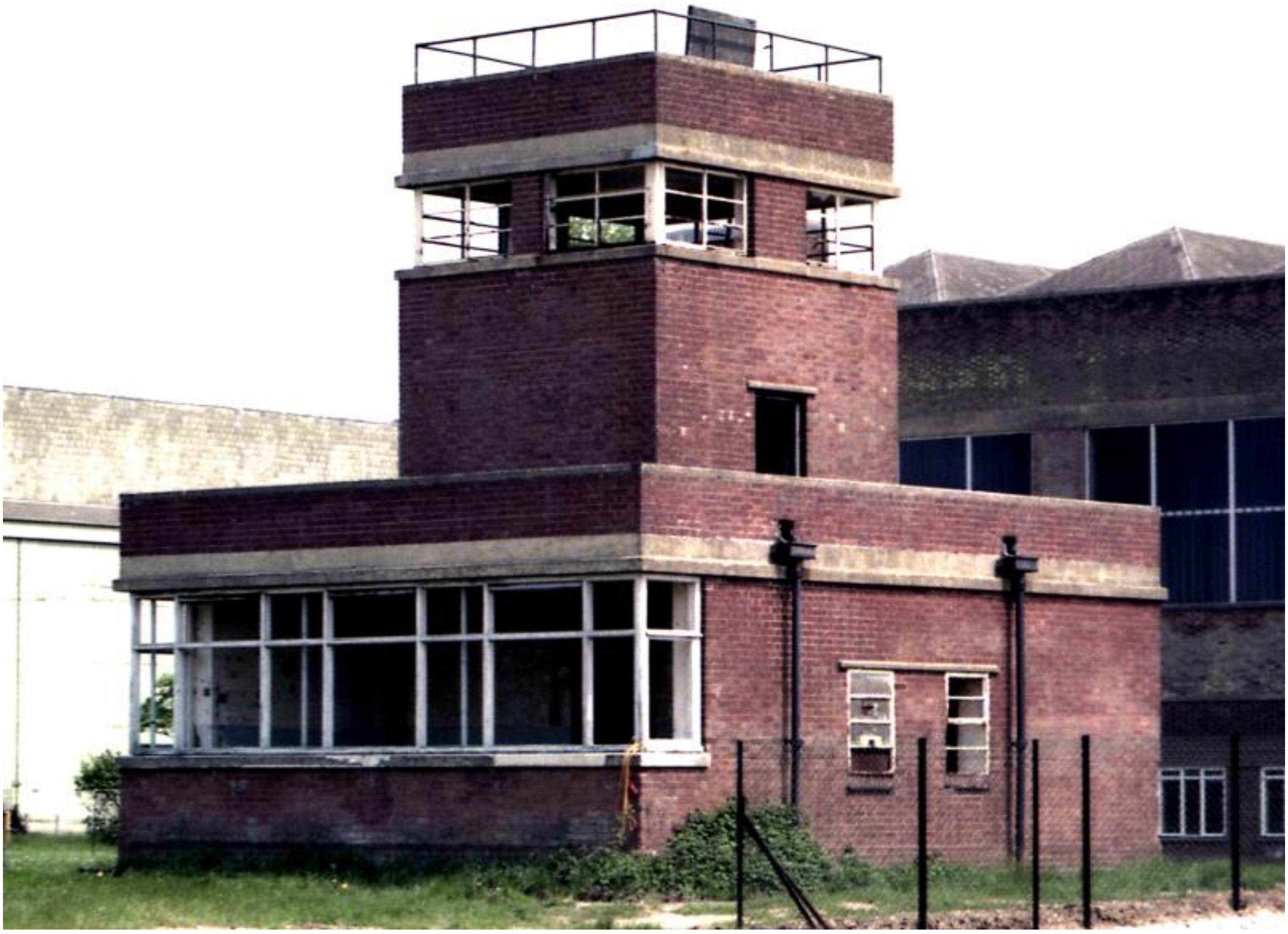


Plate 8: Bircham Newton watch office with tower 1934/34 (demolished) (02-06-79)

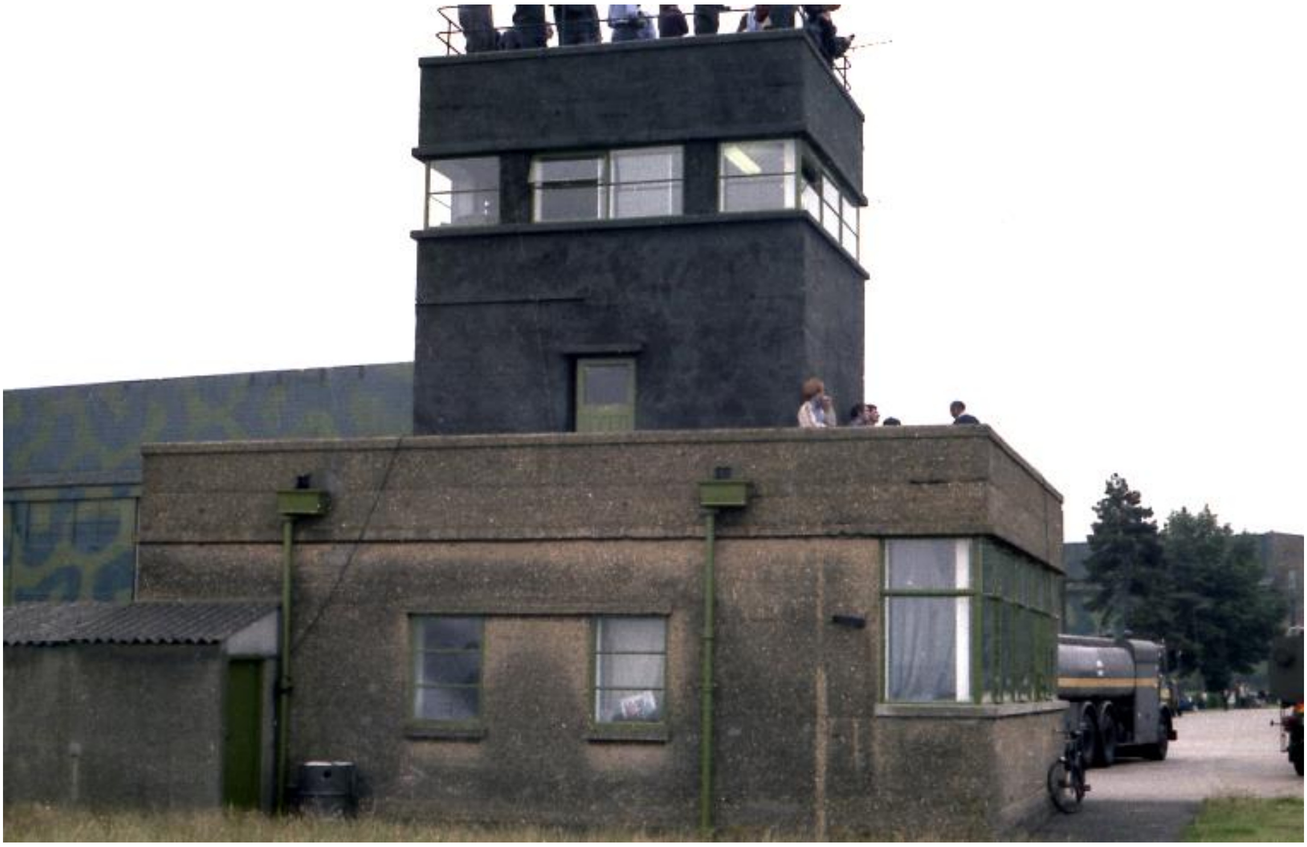


Plate 9: Wattisham watch office with tower 207/36 (06-09-81)

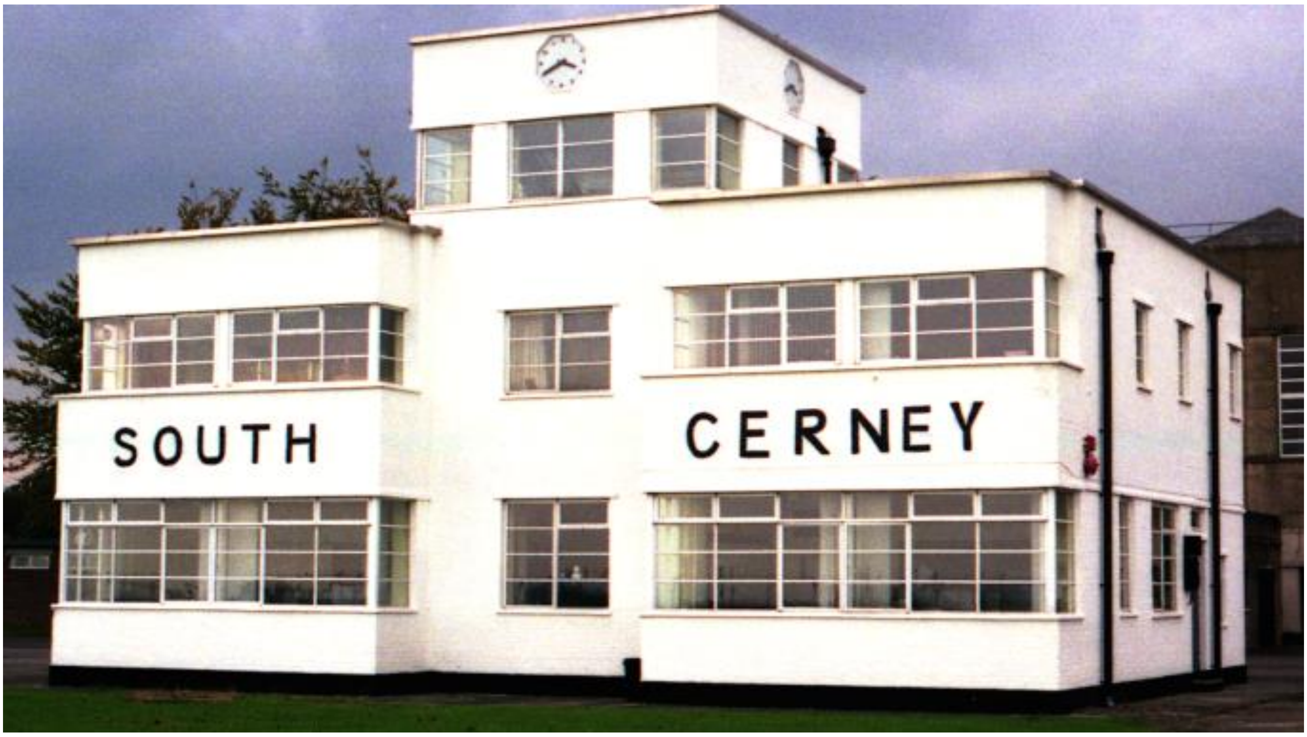


Plate 10: South Cerney flying instructor’s office (5740/36)

## 2.2 Introduction to the Watch Office with Meteorological Section

There is a direct relationship in aerodrome planning of pre-war airfields and those designed during the transition from peace to war with regards to hangar type, technical building construction, building materials used and style of watch office. The primary pre-war military air traffic control building design is the watch office with meteorological section which met the requirements of the newly formed RAF regional control organization.

Due to the deteriorating political situation in Europe which eventually led to war, the watch office with met section design had to be adapted to meet this urgency. With anticipation of war the design branches of the Air Ministry had to utilize forms of temporary buildings as a means of speeding up construction and for the economical use of building materials. This was achieved using similar internal planning and room arrangement regardless of whether a particular building is of permanent or temporary construction.

Watch office buildings belonging to this family were designed between 1939 and 1940 and were constructed between 1940 and 1942. They fall into four distinct categories, based on construction materials; all have similar layout and architectural design characteristics that are not present on subsequent building designs. The group is represented by the following general arrangement drawings:

| | |
|---|---|
| • 2328/39 | monolithic concrete |
| • 5945/39 | permanent brick and concrete |
| • 2423/39 | steel frame and timber |
| • 518/40 | version 1: temporary brick and timber. |
| • 518/40 | version 2: temporary brick and concrete |

## 2.3 Watch Office with Meteorological Section - all designs

Kirton-in-Lindsey is presumed to have been the first Scheme ‘L’ type design station with the characteristic austerity style ‘C’ type aircraft sheds (protected type, sometimes unofficially known as ‘C1’ hangars). The planning of Scheme ‘L’ stations began in late 1938 using Scheme ‘F’ monolithic concrete technical building designs as well as a new range of new buildings.

In addition to Kirton-in-Lindsey, construction also commenced in 1939 at:

- Binbrook
- Bramcote
- Coltishall
- Horsham St Faith
- Leeming
- Lindholme,
- Middle Wallop
- Newton
- Topcliffe

Additional buildings including a watch office to replace obsolete designs were also built at stations belonging to older schemes, at Leuchars, Linton-on-Ouse, Mildenhall, Waddington and Wyton.

All of the above airfields were designated as regional control stations and these featured a watch office with meteorological section to Air Ministry drawing number 2328/39, of concrete construction.

Stations such as Wick and St. Eval also had the new ‘C1’ type aircraft sheds (although not protected) but had technical buildings of all-timber construction and this included a timber and steel watch office with met section to drawing 2423/39.

Scheme ‘M’ followed Scheme ‘L’ and with it came a completely new design of hangar, known as the type ‘J’ aircraft shed. This all-steel design became a feature of all stations planned under this scheme:

- Colerne
- Coningsby
- Middleton St. George
- North Luffenham
- Oakington
- Ouston
- Swanton Morley
- Swinderby
- Waterbeach
- West Mailing

Middleton St. George is interesting as the station has a mixture of ‘C1’, ‘J’ and a temporary hangar known as the T2, caught in the transition from peacetime to wartime with the corresponding change in hangar types. New accommodation was also added to existing stations at Abingdon and Mildenhall, again in brick construction.

All of the above stations featured technical accommodation constructed of permanent brick and a watch office with met section to drawing 5845/39.

By 1940 further austerity measures had become necessary and a temporary brick and timber watch office with met section (518/40) was designed on similar lines to the all-timber building (2423/39). The aircraft storage units at, Llandow, Lichfield, Hawarden and High Ercall were the first with this new building. They were built with a mixture of permanent, temporary hangars and austerity accommodation.

The first batch of austerity wartime-designed operational airfields, planned in 1940, featured the watch office with met section 518/40 and a single type ‘J’ aircraft shed. These are located at:

- Chelveston
- Chipping Warden
- Elsham Wolds
- Goxhill
- Holme-on-Spalding Moor
- Honeybourne
- Molesworth
- Moreton-in-Marsh
- Pershore
- Pocklington
- Polebrook
- Snaith
- Wellesbourne Mountford

At these stations technical and domestic accommodation was initially based around non-dispersed temporary brick construction (see Appendix 3). Under the first planning scheme for these stations, domestic buildings were located within the same site as the technical buildings.

The final group of new RAF stations which had the watch office with met section 518/40 were planned in 1941 and all of these were based around dispersal whereby communal and domestic buildings were separated from technical buildings and located on separate sites. These included the following:

- Andreas
- Atcham
- Ayr
- Barrow
- Bovingdon
- Ballyhalbert
- Bottesford
- Carlisle
- Charterhall
- Eglington
- Fairwood Common
- Foulsham
- Hardwick
- Harrowbeer
- Honiley
- Hurn
- Ibsley
- Limavady
- Long Kesh
- Milfield
- Peterhead
- Portreath
- Rednall
- Riccal
- Shidham
- Shobdon
- Skaebrae
- Tain
- Tealing
- Tempsford
- Thurleigh
- Wing
- Wymswold

All of the above had either Bellman, Callander Hamilton or the new standard RAF temporary hangar designated as a T2 type (see Appendix 4).

The 518/40 watch office was replaced by 12779/41 and all future parent stations continued to be based on dispersal. The T2 hangar continued throughout the war as the standard RAF temporary hangar. Aerodrome planning continued to be well dispersed with separate technical and domestic accommodation

## Part 3: Permanent Designs

### 3.1 Building Designs

(A) Introduction: Concrete Construction 2328/39 and Brick Construction 5845/39 ('Villa' type)

Brick and concrete designs within this family were similar in appearance and were designed as permanent buildings. Built on attractive art deco lines, with a large proportion of the front elevation covered with metal folding windows, the control room had typical 1930s continuous streamlined curved on plan windows at the corners. This was both attractive and functional as it allowed more room on the balcony for personnel to turn the corner and gain access to the door to the control room. The watch office on the ground floor extended forward and supported the balcony above. This had a large number of closely spaced balustrades and rails, again typical of contemporary architecture of the period. In contrast, the roof of 2328/39 had a concrete parapet wall all the way round, while 5845/39 had a brick parapet wall on the front elevation and steel railings around the remaining roof area. Quite a number of buildings have been painted and therefore an easy way of distinguishing between the two types is to see if the parapet wall extends all the way round the roof (concrete) or if it is only on the front elevation (brick).

(B) 2328/39

Drawing 2328/39 is the monolithic concrete version, it was designed by the architect Frank Hawbest and is built entirely of solid (no cavity) reinforced concrete (except for brick internal walls). All external walls are 14 inch wide, thickly reinforced with steel bars, especially around window openings and beams which were all cast in situ using plywood shuttering. Interior walls are mainly 9 in thick. The buildings architectural treatment for exterior walls is based on a series of alternate 2 ft 10 in wide concrete columns and 3 ft wide window openings at both ground and first floor levels. All other features and internal arrangement is similar to 5845/39 (see below). Only one concrete version is Listed, which is Leuchars in Scotland Grade 'B'.

(C) 5845/39

Drawing 5845/39 is un-dated 1/8 inch scale general arrangement drawing that identifies Frank Hawbest, ARIBA of Works Area 8 as the architect his signature is counter signed by J Binge, ARIBA. The building has a ground footprint of 38 ft 7 inch by 45 ft 10 inch, plus a projecting staircase annexe at the rear of 5 ft 4 inch by 16 ft. The drawing shows a floor of 4 inches of concrete laid on 6 inches of hardcore, the depth of foundations is unknown but may have varied from site to site. The building is constructed with cavity brick external walls, 15ins wide with a pair of reinforced concrete columns hidden inside the brickwork (at both ends of the dividing wall of the watch office / passageway / forecast room and control room on the first floor). There are also a pair of 1 ft 1 inch square concrete columns between the watch office windows on the front elevation. Internal walls are mainly 9 inch cellular brick for corridors and main rooms, while minor walls are 4.5 inch brick. The internal finish generally is Portland cement up to dado height (4 ft) and then plaster while the watch office, teleprinter and met office have 'Tentest' hardboard lining for walls and ceilings.

The architectural treatment of the exterior side walls at ground and first floor level is mainly based on 3 ft wide units, with alternate window openings and brick columns. Exterior elevation windows are mainly type 'D' double opening five-pane steel casements (3 ft wide, 7 ft high). Those at first floor are positioned between a pair of decorative continuous reconstructed stone bands which are the ends of the first floor and roof. Ground floor and first floor windows also have reconstructed stone sills. Between the upper band and the window (course of three bricks) is wire reinforcement. A corresponding interior elevation window is a (9-pane) triple-hung steel casement. Other windows include three circular 2 ft diameter horizontally pivoted windows on the staircase annexe (banded in brick) and a 3 ft wide 12-pane vertical casement at the rear. The watch office has three 10 ft 4 inch by 6 ft 9 inch (20-pane) double glazed metal casements along the front elevation and the control room is continuously double glazed along the front elevation with curved on plan corners. The inner casement stacks inside the control room at both ends and the outer casement stacks both ends on the outside. This terminates as a glazed steel door with fan light at either end which gives access to the balcony.

The first floor and staircase is reinforced concrete slab work similar to 2328/39. Access to the roof is via the main staircase which opens out into a second storey staircase house which also functions as a balloon filling room. This structure has a projecting roof that forms a weather canopy over the entrance. The roof is nominally flat covered with asphalt, set to fall to two rain water outlets. There is a huge reinforced concrete upstand beam running the width of the building and access over this to the front section is via a galvanised steel steps arrangement. The roof perimeter consists of a 9 in brick dwarf wall capped in reconstructed stone which on some buildings runs continuously or on others, is only present at the front section and the remainder is finished in closely spaced wrought iron railings.

Many buildings were not completed until the close of 1940; in fact Oakington was not finished until January 1941 despite the station opening in July 1940.

Wartime external modifications were few, but West Mailing and Leuchars had an additional night fighter control room built against the staircase house / balloon filling room on the roof to drawing 10342/42. Horsham St. Faith had a Seco control room built on top of the roof of the staircase tower. The most popular post war modification is the addition of a visual control room which could either be built on a steel plinth fixed to the roof, or as in the case of Linton-on-Ouse, position adjacent to the building, fixed on external steel framework.

Two buildings are Listed, Swanton Morley and West Malling Grade 2.

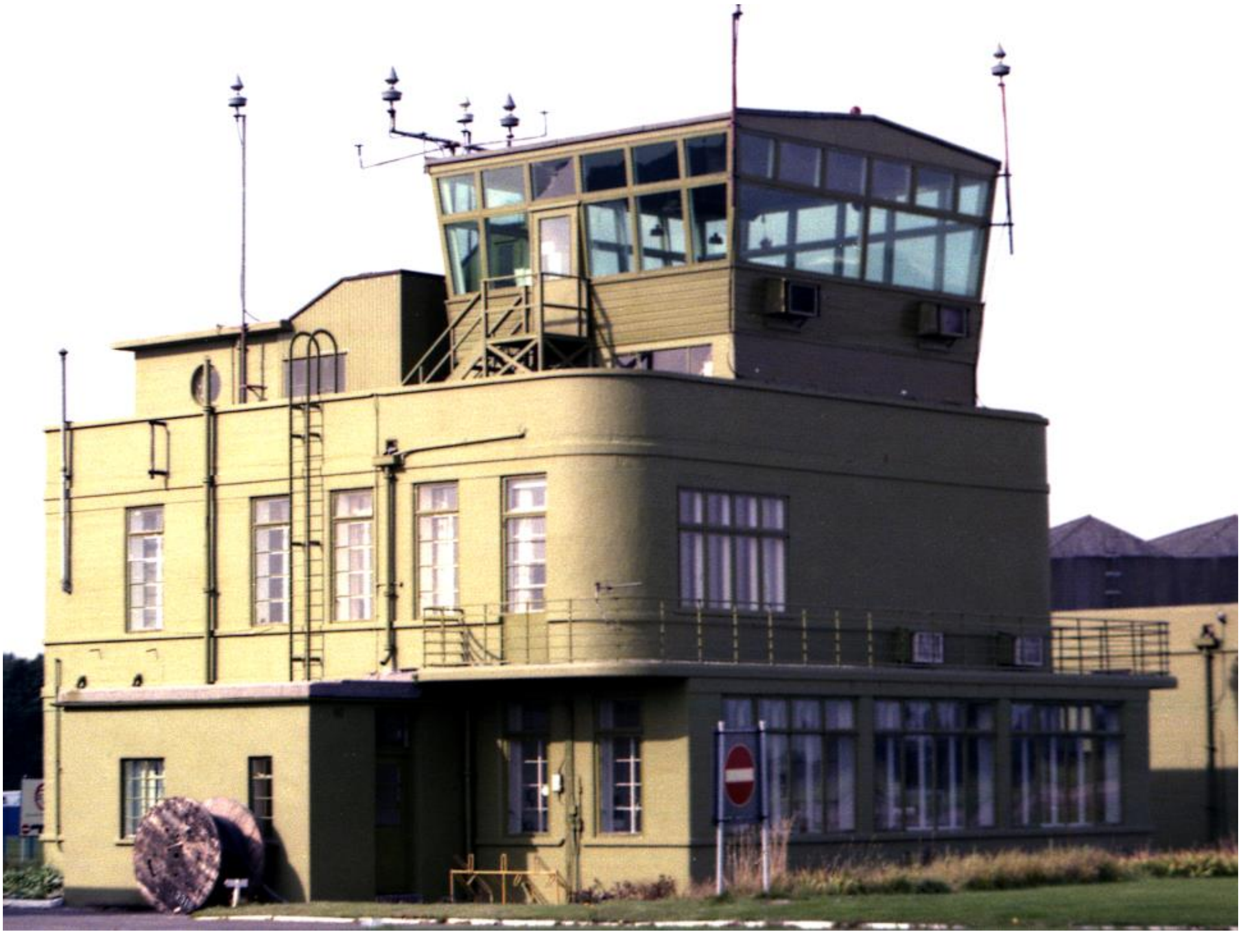
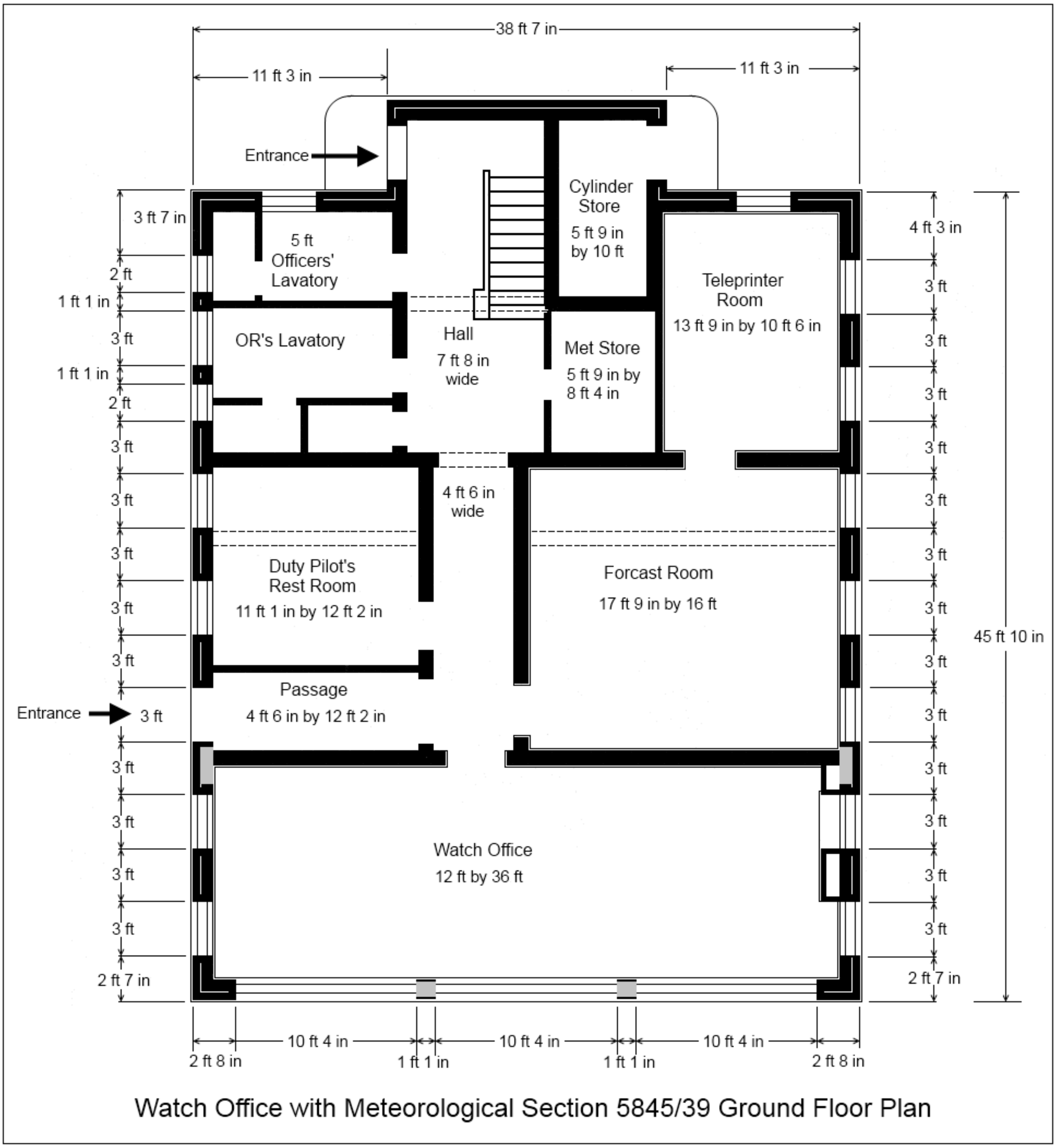
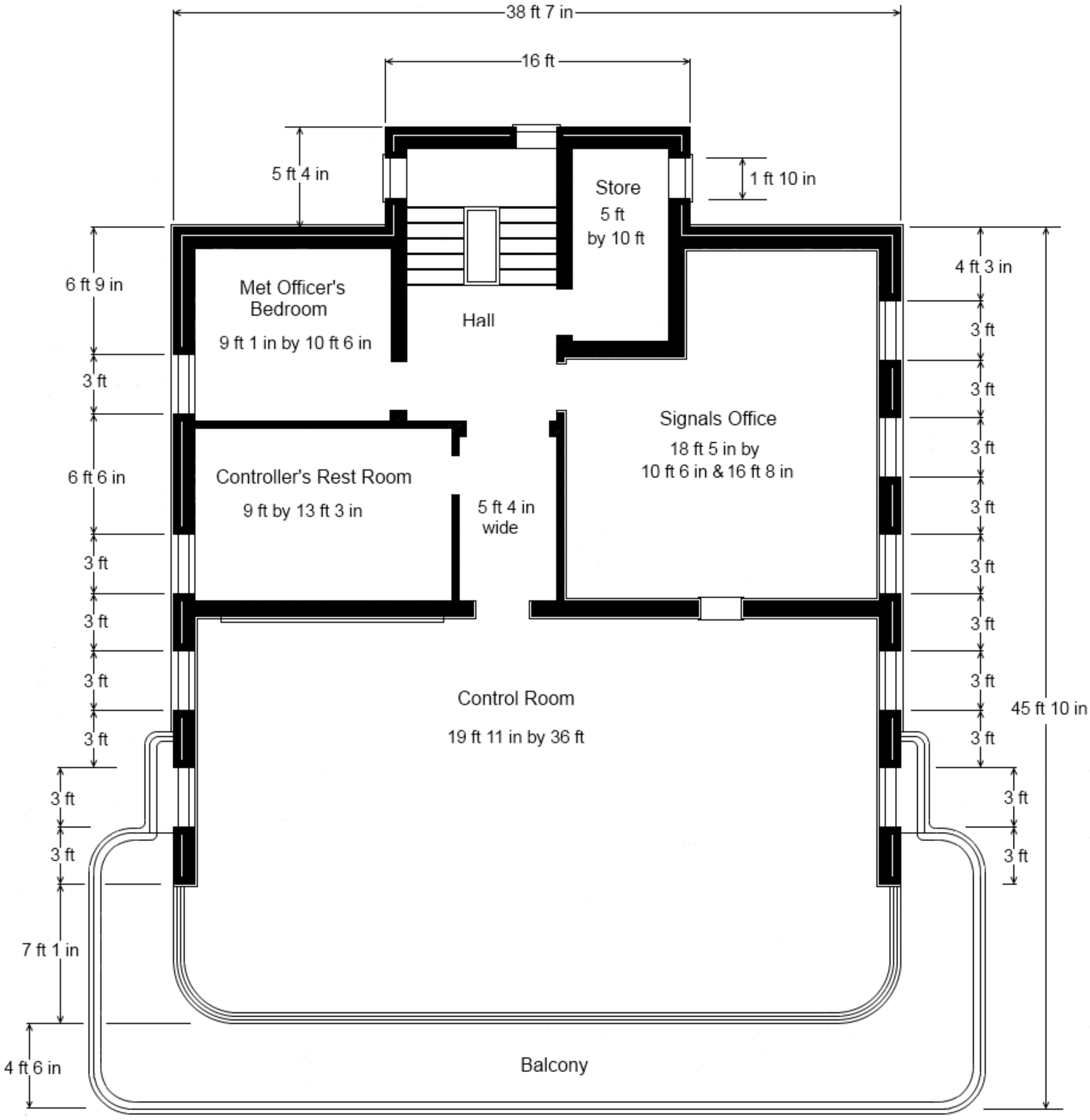


Plate 11: Topcliffe 2328/39 (29-09-79)

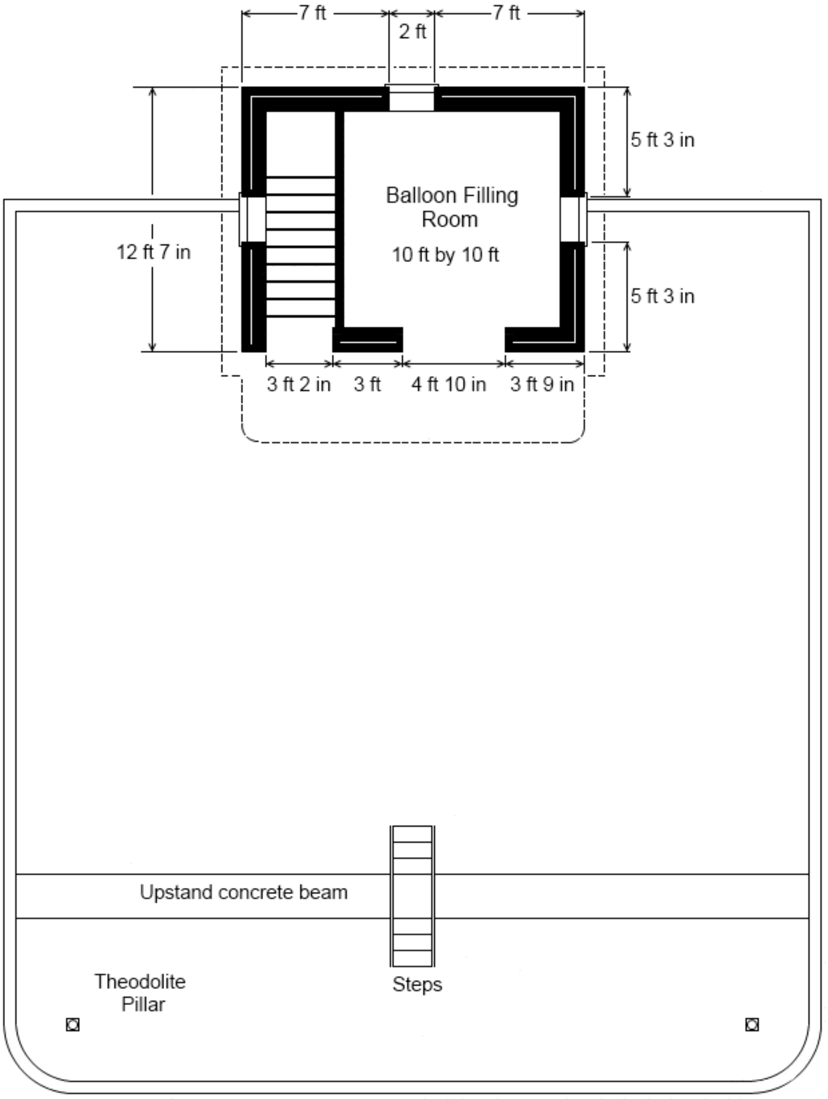


Watch Office with Meteorological Section 5845/39 Ground Floor Plan

Plates 12 to 14: plans of building 5845/39



Watch Office with Meteorological Section 5845/39 First Floor Plan



Watch Office with Meteorological Section 5845/39 Roof Plan

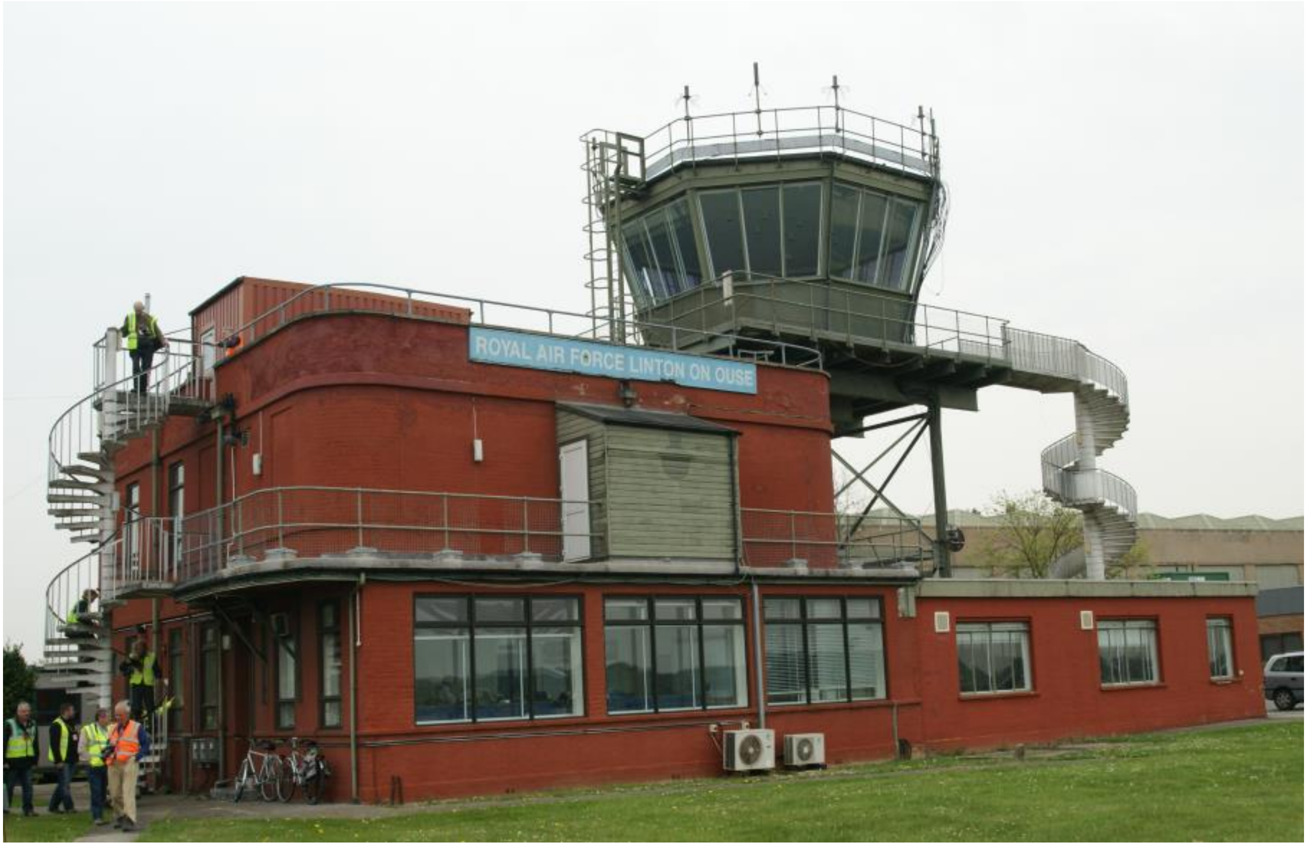


Plate 15: Linton-on-Ouse 2328/39 (04-05-11)

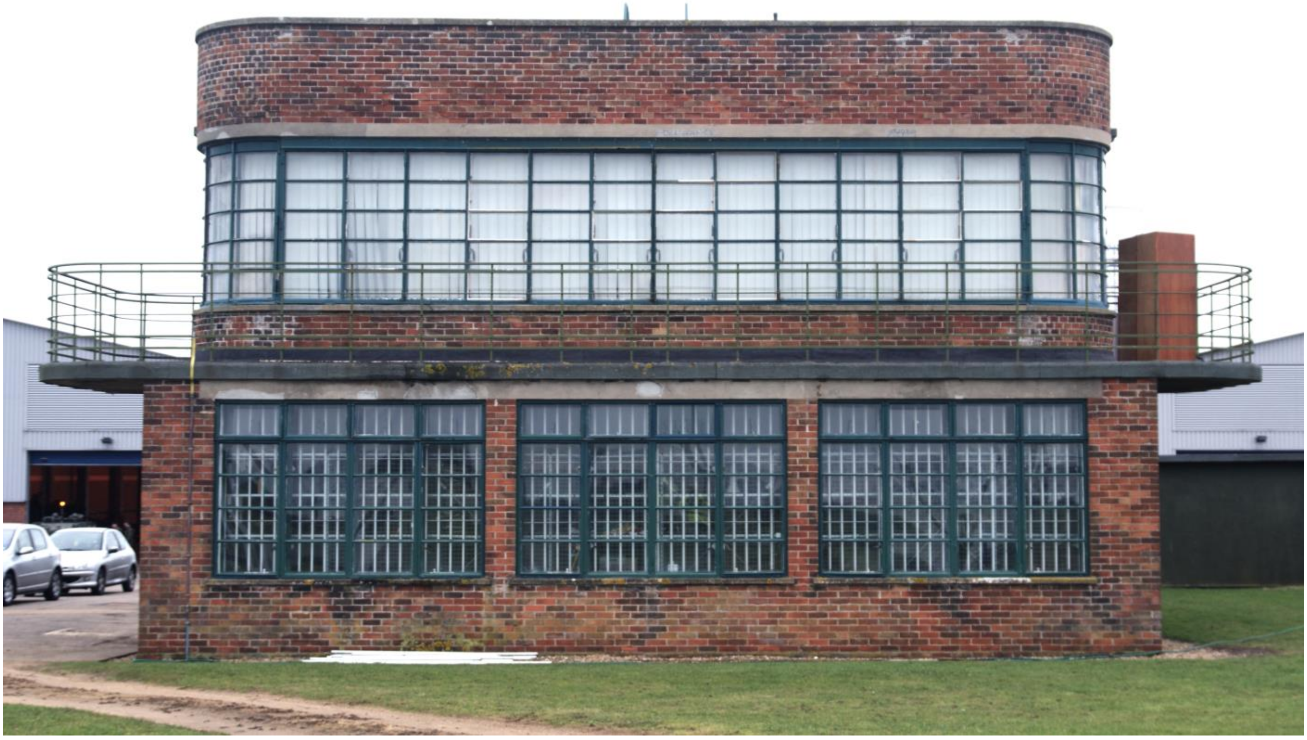


Plate 16: Swanton Morley 5849/39 (21-01-11)

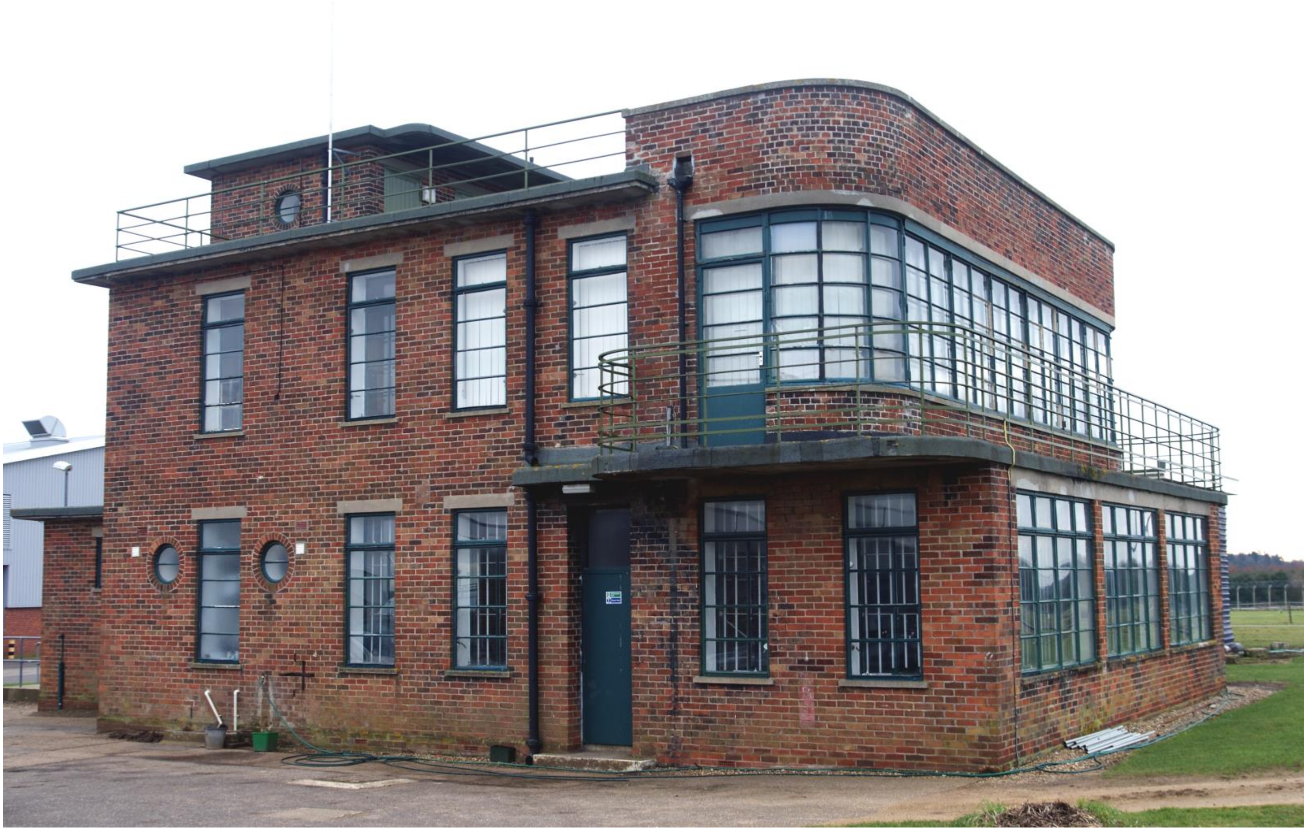


Plate 17: Swanton Morley 5845/39 (21-01-11)

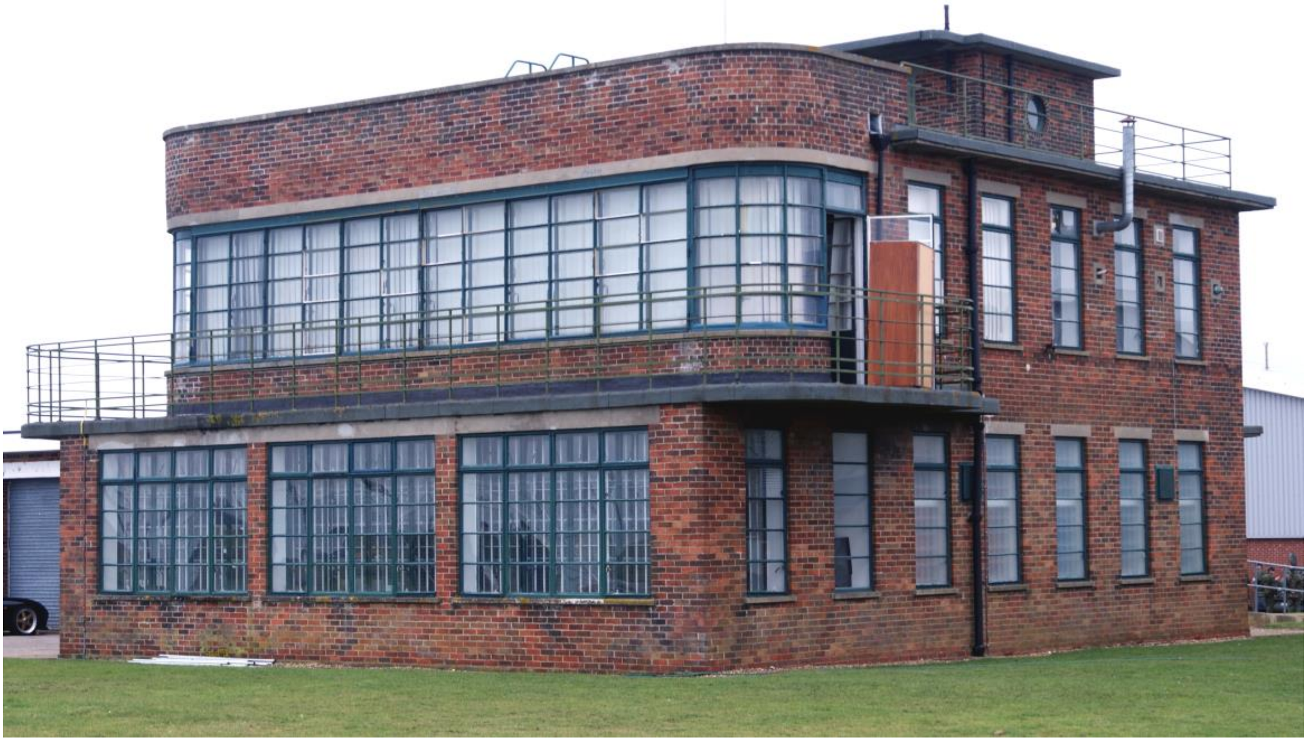


Plate 18: Swanton Morley 5845/39 (21-01-11)

# Part 4: Temporary Designs

## 4.1 Building Drawings (Steel / Timber Design)

### (A) All Timber Construction 2423/39

Drawing 2423/39 does not survive, so it is difficult to give an accurate description of this building, although I did take notes when visiting the Wick building in 1993. It is presumed to be steel-framed with timber, roof and floor units plus a timber staircase. Exterior walls are timber-framed units between RSJs columns and externally clad with timber re-bated cedar weather boarding and lined on the inside with plasterboard. The timber as originally used was probably high class Canadian cedar as used on ‘A’ and ‘B’ type hutting.

This building has a footprint of 37 ft by 44 ft and as far as is known, was built on only two locations in the UK. These were St. Eval and Wick, both of which had permanent ‘C’ type aircraft sheds but with the remaining technical and living accommodation in timber hutting. The only surviving example is at Wick, which was re-clad in 1968 and the original steel windows replaced.

The Wick building is not Listed.

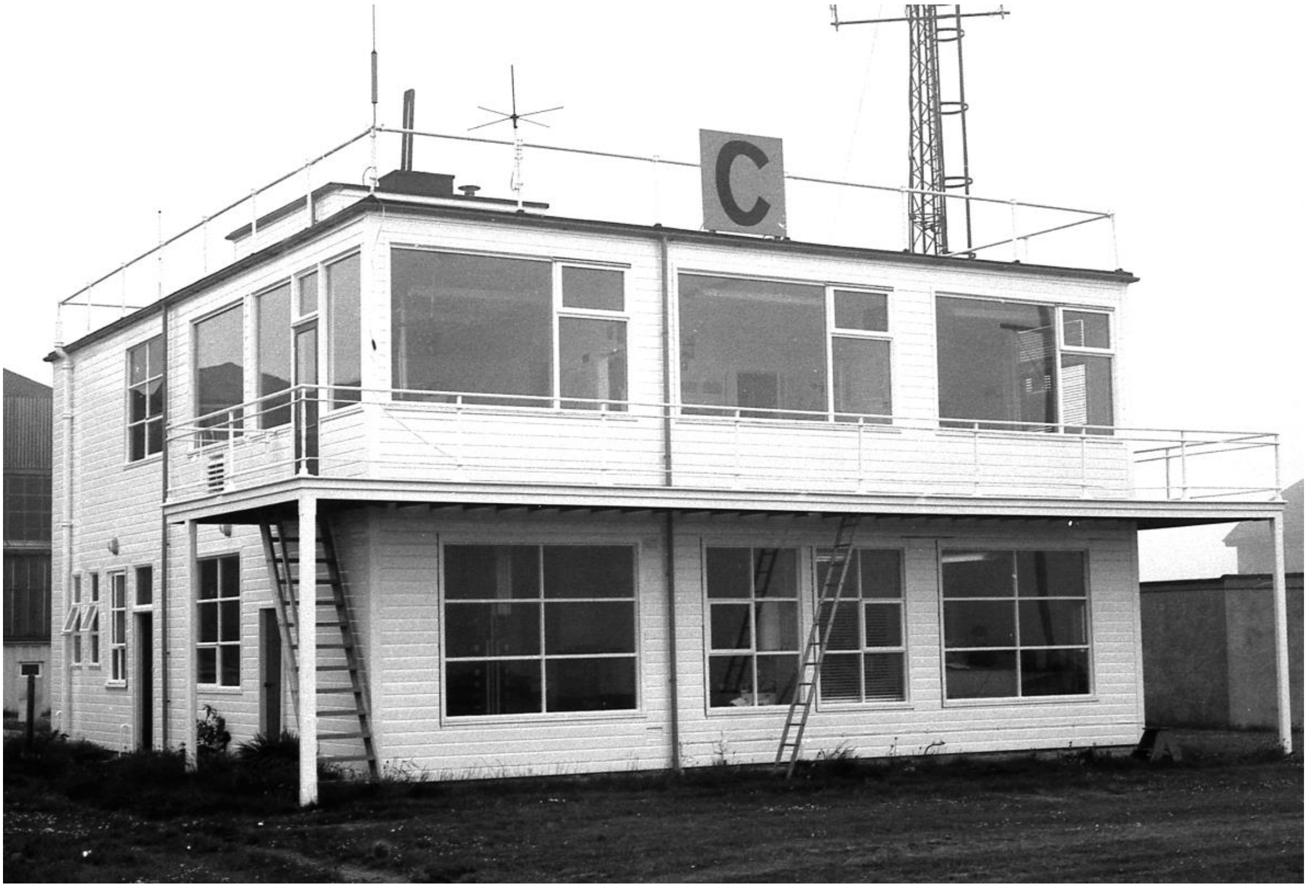


Plate 19: Wick (05-06-82)

## 4.2 Building Drawings (Temporary Brick)

### (A) Introduction

Drawing 518/40, as far as the building's layout and architectural characteristics identifies it is a wartime austerity version of 5845/39 and appears to be directly based on 2423/39, The chief difference between 2423/39 and 518/40 is that the 518/40 version has exterior walls of 9 inch brick as opposed to timber. Presumably because of the temporary nature of its design, the architectural feature of the permanent designs consisting of the curved-on-plan windows have been omitted, but the window openings are very large both in height and width and collectively represent a nearly full-width glazed opening. There are two further characteristics that connect this design with the pre-war versions:

A projecting stair case annexe at the rear of the building which rises above the roof is common to all versions. This enabled more floor area inside the building for rooms and associated stores for the met section, a large watch office and control room, big enough for the installation of modern air traffic control equipment.

Floor plan: in all cases the ground, first floor and roof internal arrangements are similar. Both of these characteristics are confined to this family of buildings and are not repeated on future watch office designs.

### (B) Associated Drawing Numbers

All 1940 drawings are associated with buildings that were built either at the aircraft storage units (ASU) and parent operational training unit (OTU) stations constructed in the midlands plus parent operational stations as it was airfields of this type that were the priority for construction during 1941 / 1942.

518/40

Drawing 518/40 (a copy of which is preserved in the ARG archives) is the primary general arrangement (GA) and is the one often quoted within the schedule of buildings on all airfield record site plans of stations having this watch office type. It is drawn to the standard 1/8th inch scale (1/8 in equals one foot), the signature belongs to the Works Area 8 architect is H Godwin LRIBA and is countersigned but it is not possible to identify the signature. The drawing is dated January 1940 and shows a two-storey building with projecting stairwell house above the roof line. The 518/40 footprint dimensions and it compares with 2328/39 and 5845/39 are as follows:

- 518/40
- 37 ft 6 in wide by 44 ft 9 in long plus a central projecting staircase annexe at the rear 5 ft 4 in long by 12 ft 6 in wide. There is also a 4 ft 6 inch wide balcony along the front elevation that extends part of the way along both side elevations.
- 2328/39
- 38ft 4in wide by 46 ft 7 in long plus a central projecting staircase annexe at the rear 5 ft 4 in long by 15 ft 9 in wide. The front elevation at first floor level forms a 4 ft 6 in wide balcony that extends part of the way along both side elevations.
- 5845/39
- 38 ft 7 in wide by 45 ft 10 in long plus a central projecting staircase annexe at the rear 5 ft 4 in by 16 ft. The front elevation at first floor level forms a 4 ft 6 in wide balcony that extends part of the way along both side elevations.

It can be seen therefore that the footprint of the 5845/39 building is slightly larger than 518/40 but if you compare the plans of both structures, they are related with one being permanent and the other temporary.

The 518/40 drawing called for 6 inch thick concrete slab laid on 4 in of hardcore, the depth of foundations is unknown but is assumed to be fairly shallow. Exterior walls are cement-rendered 9 in solid brick while room dividing walls include a load bearing arrangement on the ground floor consisting of a 9 in lateral brick wall and a 10 by 5 in (30 lbs) RSJ composite. This wall also has a pair of piers that support at first floor level, two longitudinal 12 in by 5 in (32 lbs) RSJs that connect with corresponding 18 in by 13.5 in piers on the front elevation. The staircase annexe walls are also 9 in while all other room dividing walls are 4.5 in brick. These are laid fair face except for a 4 ft high Portland cement dado. The first floor, balcony and roof are based on timber joists and floorboards and the drawing also includes a timber staircase.

Windows are single-glazed multi-pane steel casements, the majority being standard wartime types which are fitted with a 4.5 in brick return:

- 1 ft 8 in by 4 ft (4-pane)
- 3 ft 4 in by 5 ft (10-pane)
- 5 ft by 5 ft (15 pane)

The watch office windows are sliding and folding casements with the following dimensions: 8 ft by 6ft 6 in (18-pane) and 10 ft 8 in by 6 ft 6 in (24 pane).

Control room windows are 8 ft by 8 ft (21-pane) and 10 ft 8 in by 8 ft (28-pane). The balcony is accessed through a patio style door and fanlight arrangement 5 ft wide (18-pane).

External doors are framed, ledged and braced and internal are either three or two panel pitch pine / plywood doors.

The gutter is a continuous cast-iron 4 inch arrangement with 4 inch diameter cast iron down pipes leading to cast concrete gulleys. The roof is set to fall 3 inches in two directions to feed the down pipes located on the side walls.

### 552/40

Drawing 552/40 (which is preserved in the ARG archives) is another from the architect H Godwin and this time the drawing is countersigned by A Beasley ARIBA. It consists of a ½ inch scale staircase detail drawing which is to be used in conjunction with 518/40. From this it is possible to get accurate details of its timber construction. The drawing indicates that the main roof is a series of 7 by 2 inch timber joists at 16 inch centres and that over the staircase is 4 by 2 inch joists. The roof is ¾ inch timber boarding externally clad with asphalt reinforced with chicken wire.

### 8936/40

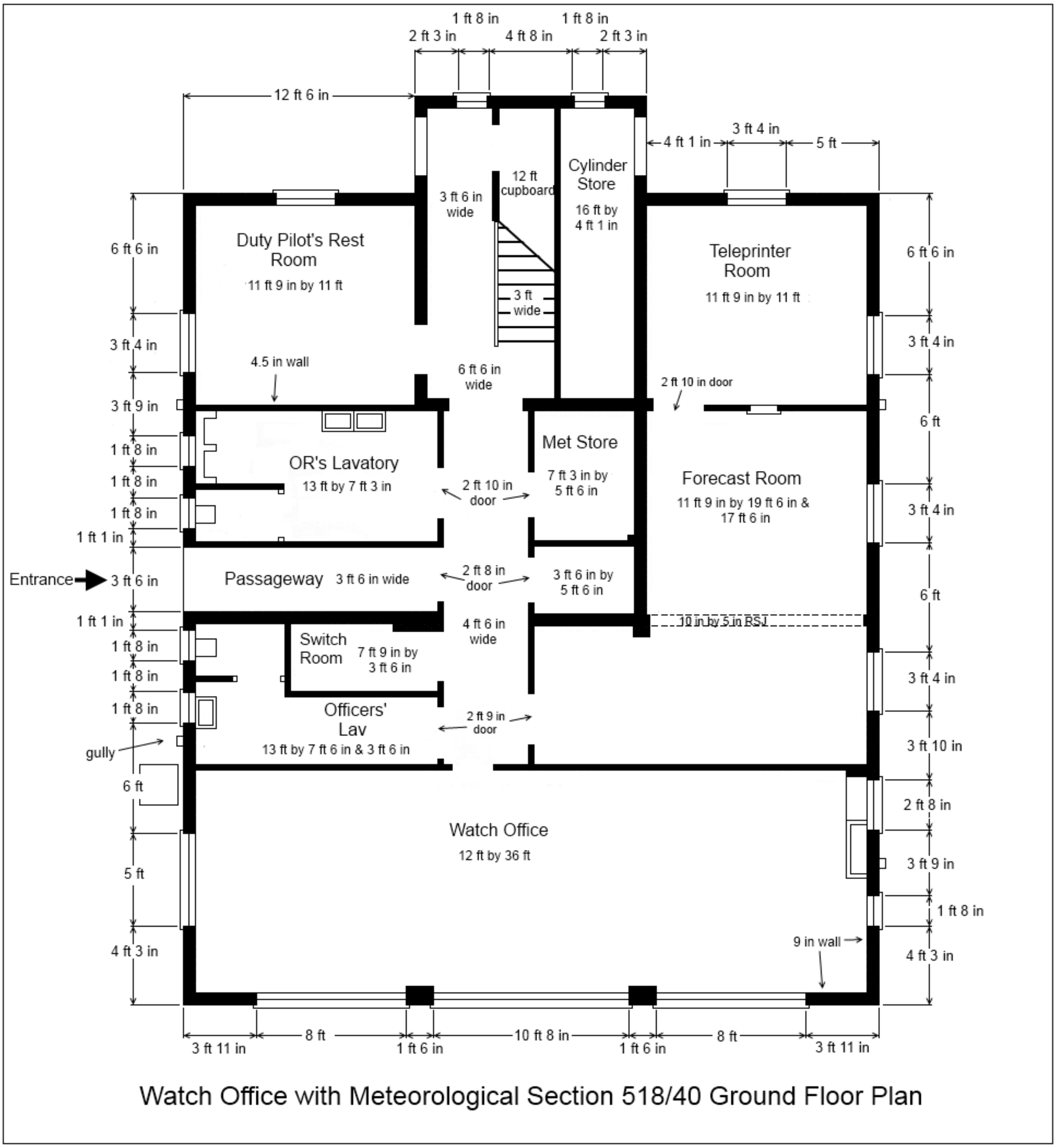
As far as is known drawing 8936/40 does not survive in any archive, it is the second most common drawing found on airfield record site plans that are associated with this austerity building and it is assumed to date from June 1940. It is also assumed that it is a deviation or a supplement drawing, to be used in conjunction with 518/40. It may have referred to a change in construction for the roof, stairs and part of the first floor from timber to concrete and concrete slab. An assumption is that only the floor above the watch office room and balcony was retained in timber, the remaining first floor area, plus the roof and staircase was changed, probably to give the building improved fire-proof properties as the floor and roof were constructed in lightweight ‘Sigwart’ or ‘Smiths’ patent fire proof roofing units. Alternatively the drawing may have nothing to do with concrete floor in lieu of timber.

### M&E 11237/40 and M&E 14317/41

These are mechanical and electrical drawings for internal wiring, M&E 14317/41 dated 24-11-41 is a superseding drawing to the original. A fragment of M&E 14317/41 survives in the ARG archives.

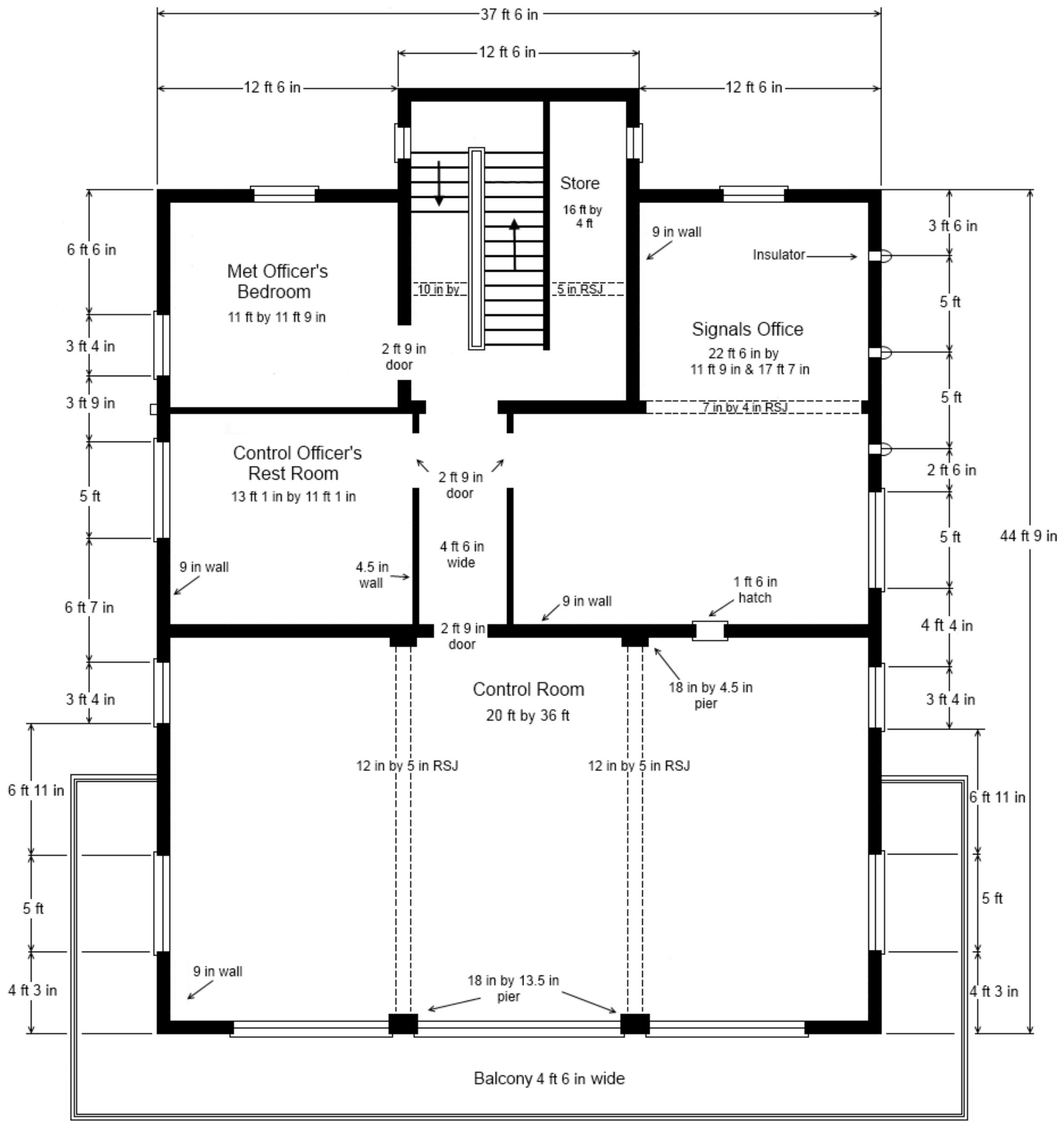
### 16406/40

Details of this drawing are unknown.

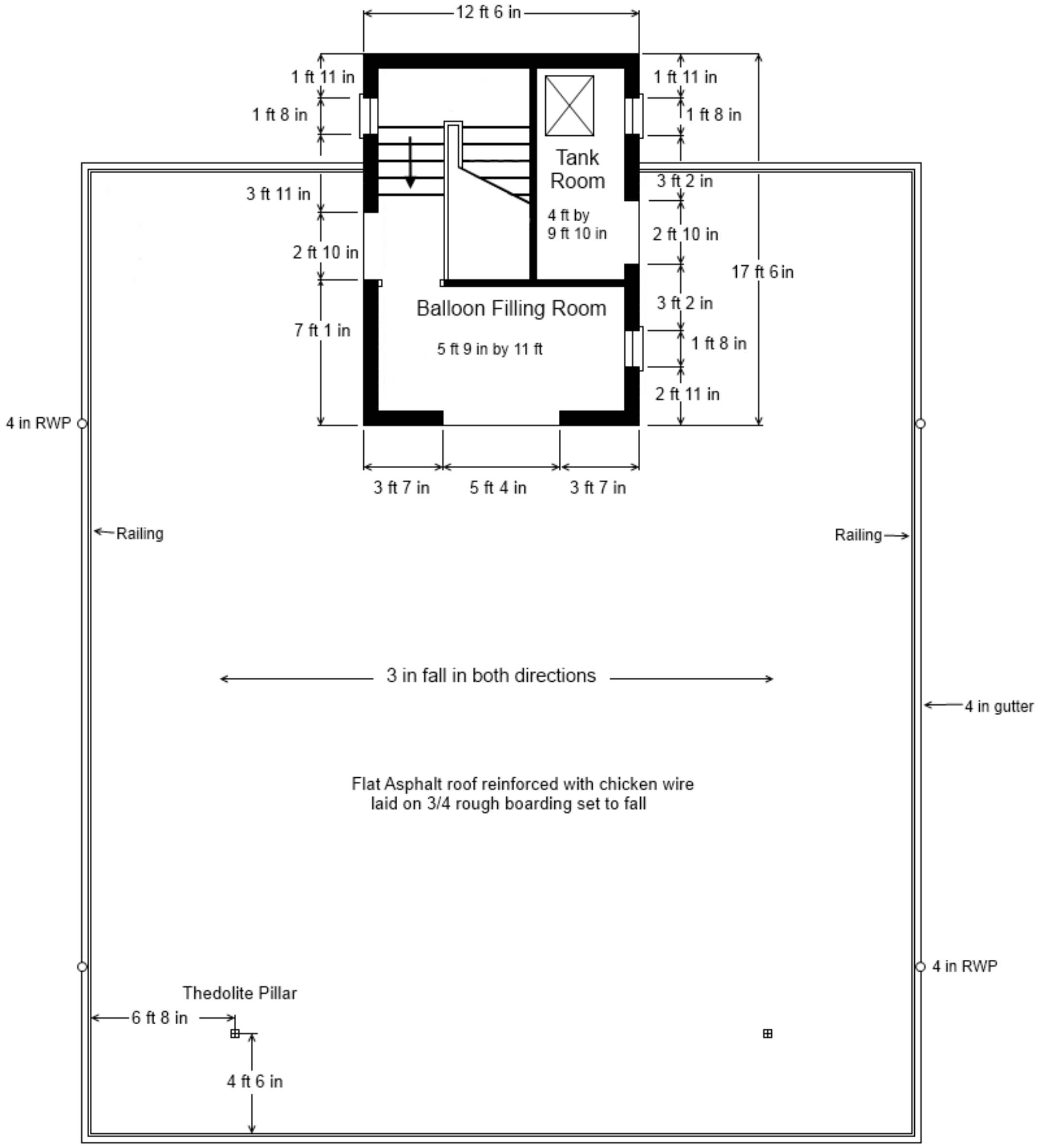


Watch Office with Meteorological Section 518/40 Ground Floor Plan

Plates 20 to 22: drawing 518/40 plans based on the original drawing



Watch Office with Meteorological Section 518/40 First Floor Plan



Watch Office with Meteorological Section 518/40 Roof Plan

## 4.3 Bovingdon, Shipdham and Wymeswold

The following airfields were visited in order to compare them with the building at Ibsley.

(A) Bovingdon (28-02-09)

This building had been modified post WWII with a new room added at ground floor level, built against the front elevation. There was also a signalling pent house on the roof but the date of construction of these two structures is unknown. It is known that in 1947 a Lamson plant facility was installed inside an adjacent Handcraft hut that served the control tower and the Lamson pipe work was virtually complete inside the building when viewed in 2009.

The building is famous for appearing in a few iconic films including ‘The War Lover’ (1962), ‘Mosquito Squadron’ (1969) and ‘Hanover Street’ (1979). It also features in the Avengers television series, (season 4, episode 9) ‘The Hour That Never Was’ (1965). I recommend anyone interested in WWII airfields, to take a look at these films especially The Hour That Never Was.

When viewed in 2009, the building was in very poor and in a dangerous condition, being partially buried under tons of rubble and earth. Consequently the ground floor walls were under immense loading due to the encroachment of the earthworks. It is presumed now to be to be demolished.

(B) Shipdham (28-09-11)

This building appears to have been partially been restored (within the last five years), as two of its exterior walls have been recently cement rendered and the roof has a new asphalt carpet. The rendering appears to have been completed to a satisfactory standard but the roof, while at first glance it appears reasonable, it dips towards the centre. Consequently rain water collects in the middle instead of being encouraged to disperse to the guttering (there should be a three inch fall from the centre in both directions to the gutters instead of a fall in the opposite direction. There are very few fittings extant, including window frames and railings.

The exterior walls that have not been recently rendered are in very poor condition, having badly spalled, with very little of the original rendering remaining. The interior is quite good, clean (without graffiti) and fairly dry for both walls and ceilings considering the large window openings. There is one fairly serious vertical crack in the stairwell annexe. The overall impression is good.

(C) Wymeswold (02-10-11)

The Wymeswold building had been modernised during the 1950s and 1960s, evidence of this is apparent in nearly all rooms, the most significant perhaps is the conversion of the teleprinter room into a ‘B’ centre. There is 1950s electrical conduit and fittings in nearly every room and the internal paint scheme dates from this period.

This is probably the best of the derelict buildings and includes most of the front window frames which have now become detached from the building as has the balcony tubular steel railings. The walls retain much of the original render, but patches of brickwork can be seen where the rendering has broken away. This has revealed a curious keyed brick and damp proof course.

The presence of original window frames to the watch office and control room should be noted as important as this set may be the only one in existence in England.

The roof is almost completely asphalted except for a patch in the centre. The overall impression is that this building is the best example.

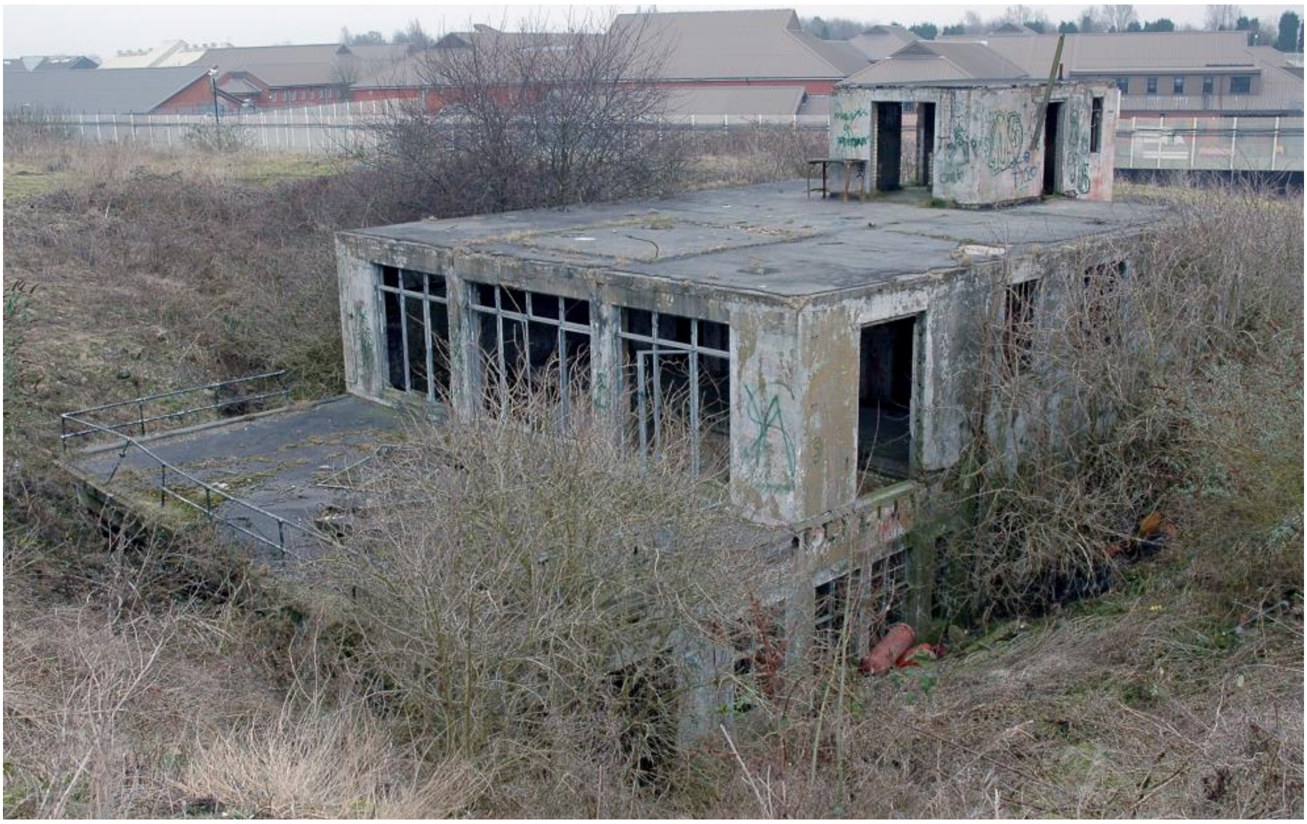


Plate 23: Bovingdon – watch office with meteorological section 518/40 (28-02-09)

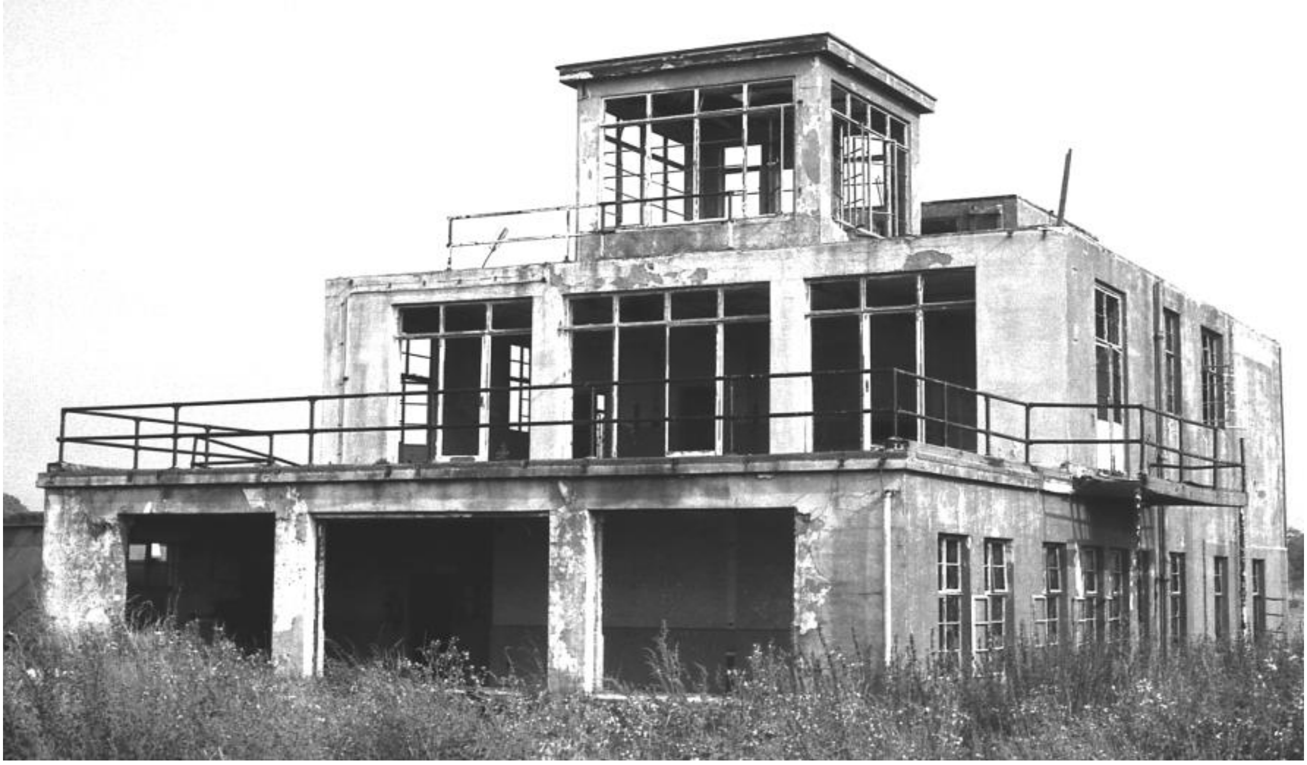


Plate 24: Bovingdon – watch office with meteorological section (16-08-82)

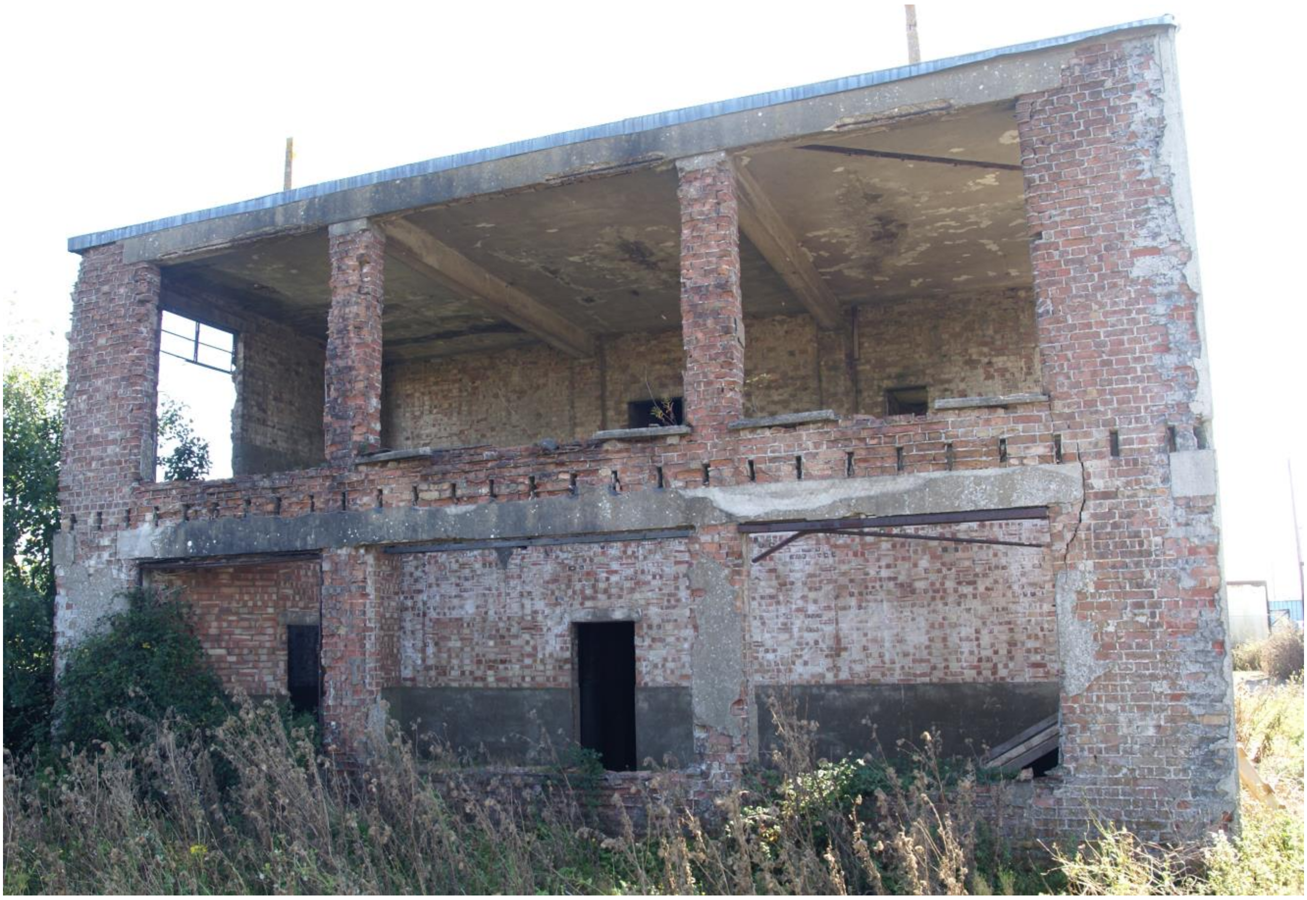


Plate 25: Shipdham watch office with meteorological section 518/40 (28-09-11)

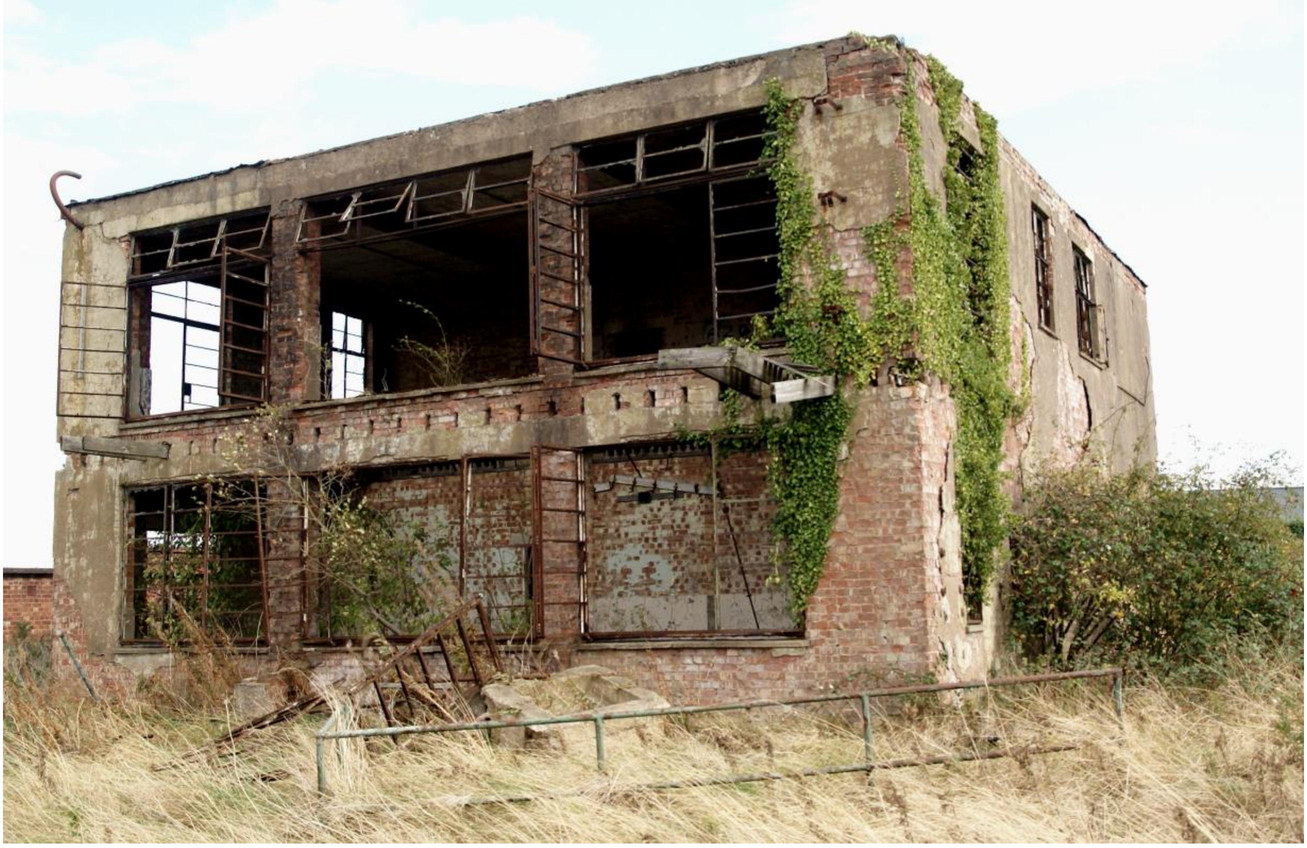


Plate 26: Wymeswold watch office with met section 518/40 with detached windows and balcony railings (02-10-11)

## 4.4 Room Arrangement

The following descriptions are based on the original drawing and observations made at Bovingdon, Shipdham and Wymeswold.

### (A) Ground Floor

The main entrance is located on the right-hand side of the projecting staircase annexe, the left-hand door only allows access to a hydrogen cylinder store, used for inflating weather balloons in a room up on the roof.

The first room is a hall with staircase and this leads into a central corridor which gives access to the front of the building with rooms either side. On the right is the Duty Pilot's rest room (11 ft by 11 ft 9 in), following this is the airmen's toilets (7 ft 3 in by 13 ft) and after this is a side entrance passage which is 3 ft 6 in wide. After the passage is a switch room with a full length 2 ft wide and 2 ft deep trench. This is followed by the officers' toilets which is 'L'-shaped due to the switch room occupying part of its space.

On the left after the staircase is a met store (5 ft 6 in by 7 ft 3 in) plus a further store cupboard (5 ft 6 in by 3 ft 6 in) which is opposite the passageway and then a large 'L' shaped met forecast room (19 ft 6 in long). In here would be a mercury column barometer, charting bench and cupboard. Access to the teleprinter room (11 ft by 11 ft 9 in) is through this room. The front elevation is the full-width watch office (12 ft x 36 ft), which has a pyrotechnic store in one corner. On the rear wall would have been the 'aerodrome instructions board'. Ceiling height on the ground floor is 10 ft.

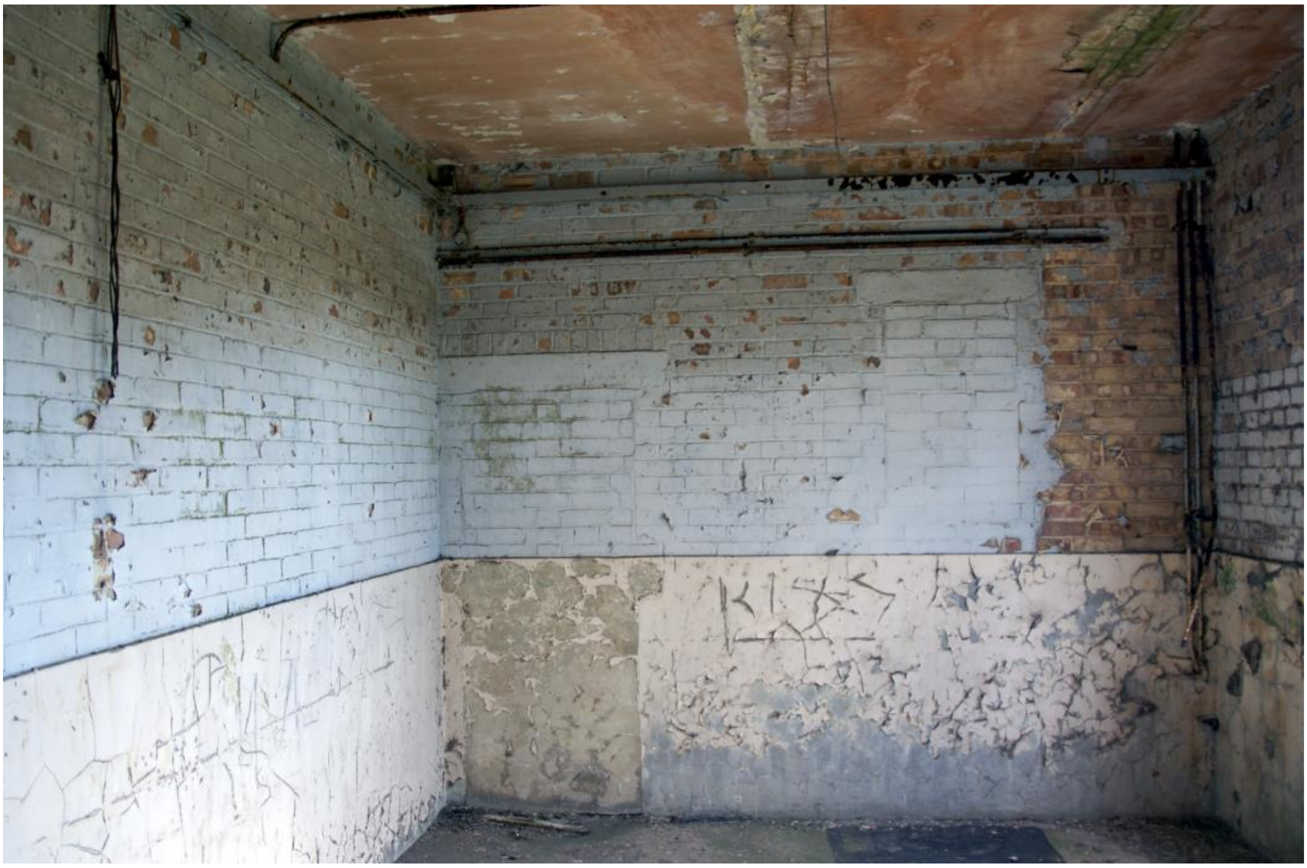


Plate 27: Wymeswold - forecast room looking towards bricked-up door and hatch to teleprinter room. The teleprinter room at Wymeswold was used post-war as the 'B' centre (airfield lighting electrical control room) and a new access route was made from the outside (02-10-11)

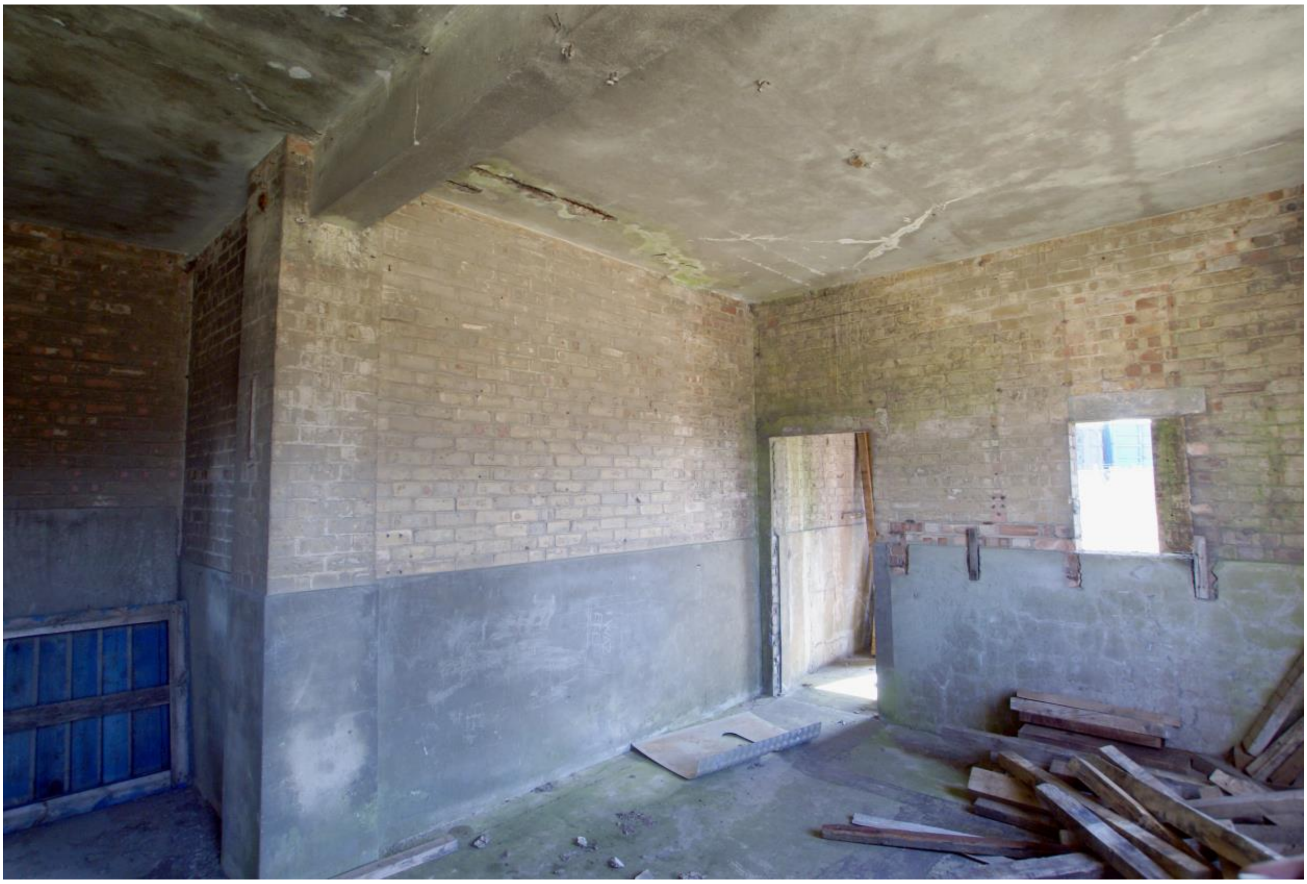


Plate 28: Shipdham - forecast room looking towards teleprinter room with door way and hatch (28-09-11)

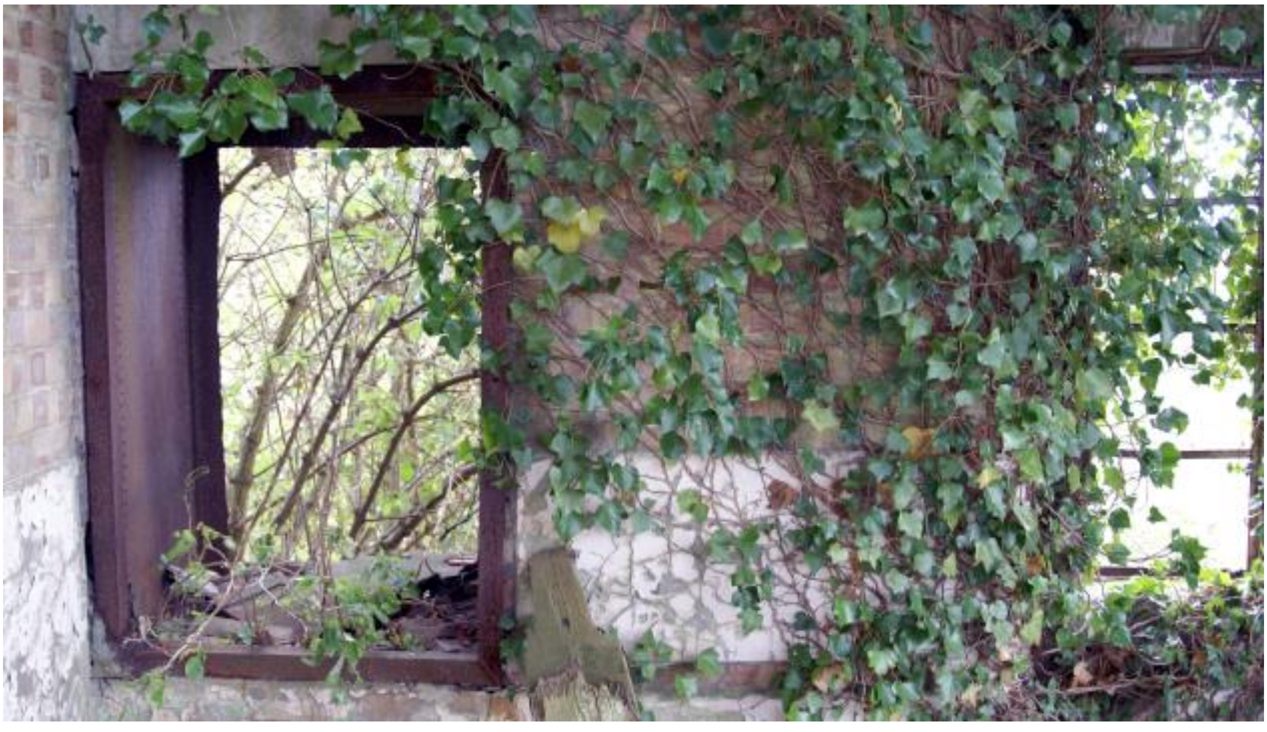


Plate 29: Wymswold – steel-lined pyrotechnic cupboard (02-10-11)

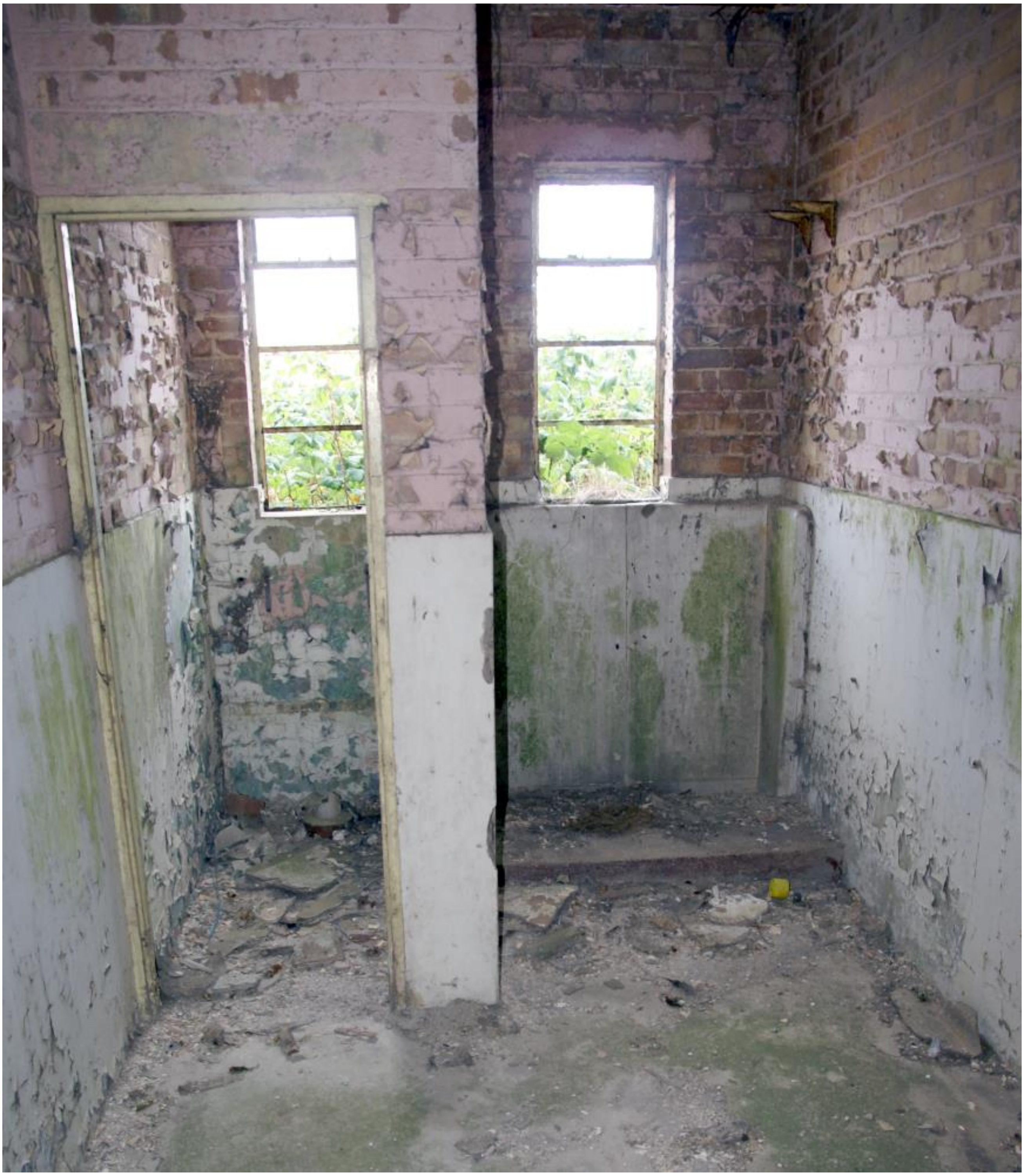


Plate 30: Wymeswold – O/R’s lavatory urinal and WC (02-10-11)

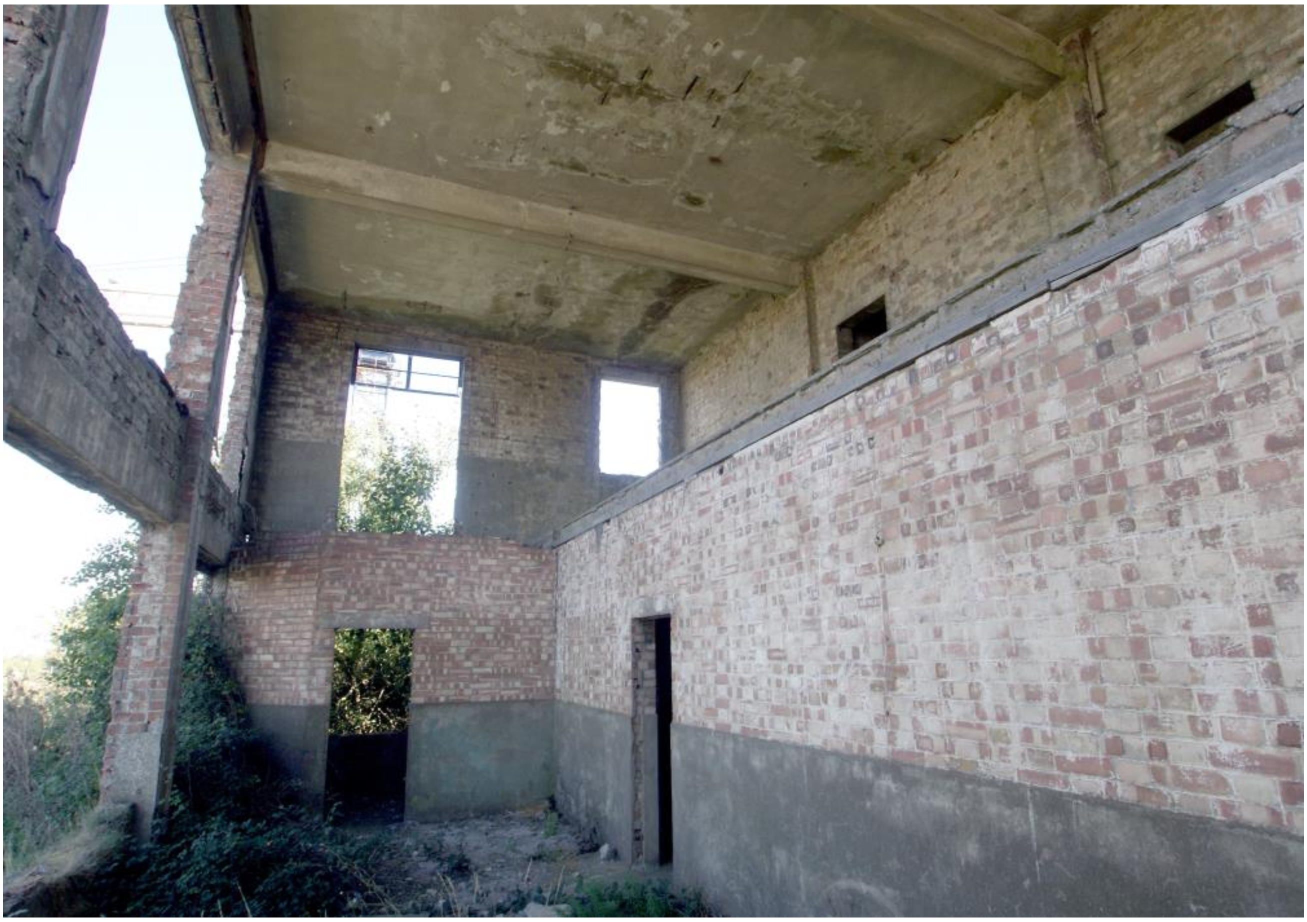


Plate 31: Shipdham watch office and control room (28-09-11)

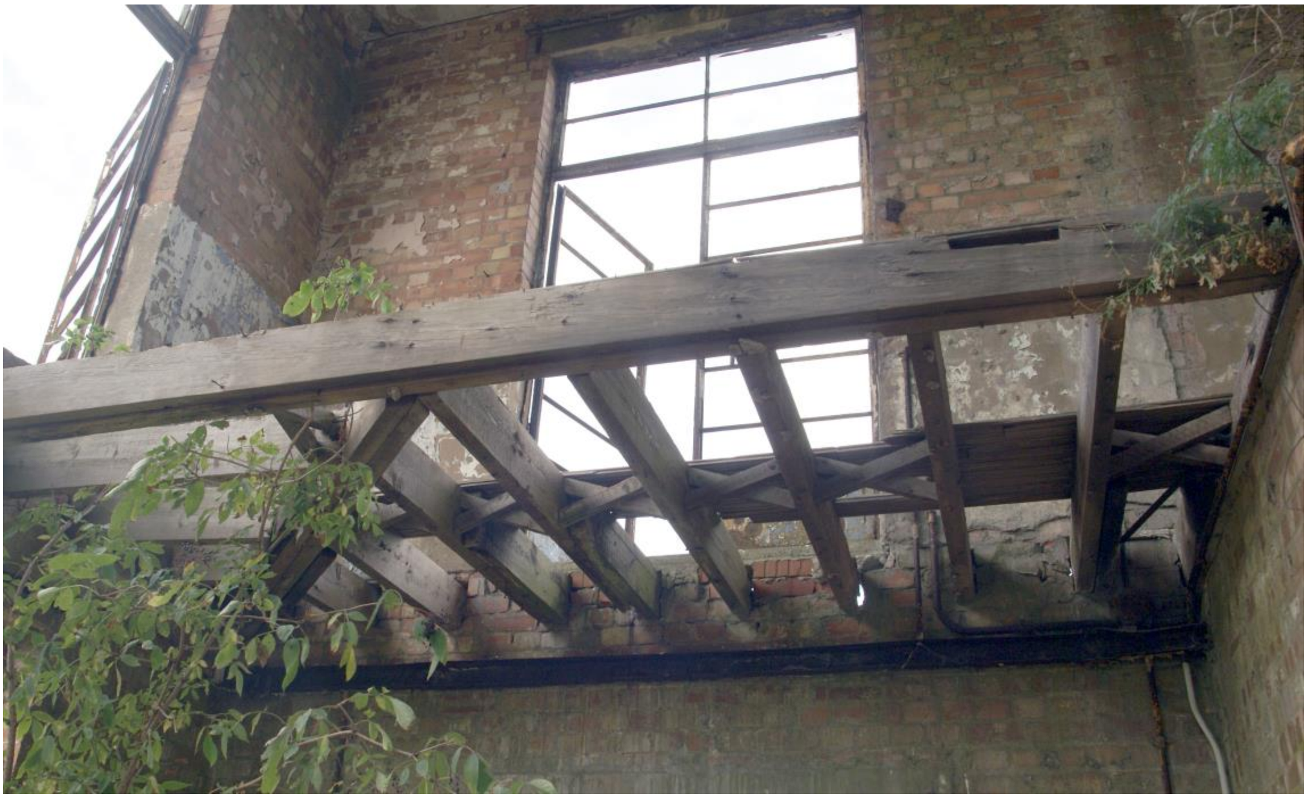


Plate 32: Wymeswold – detail of a section of timber ceiling and floor to control room (7 in by 2 in joists at 16 in centres). Note that the two outer sections has lateral running joists, the centre section had longitudinal running joists.

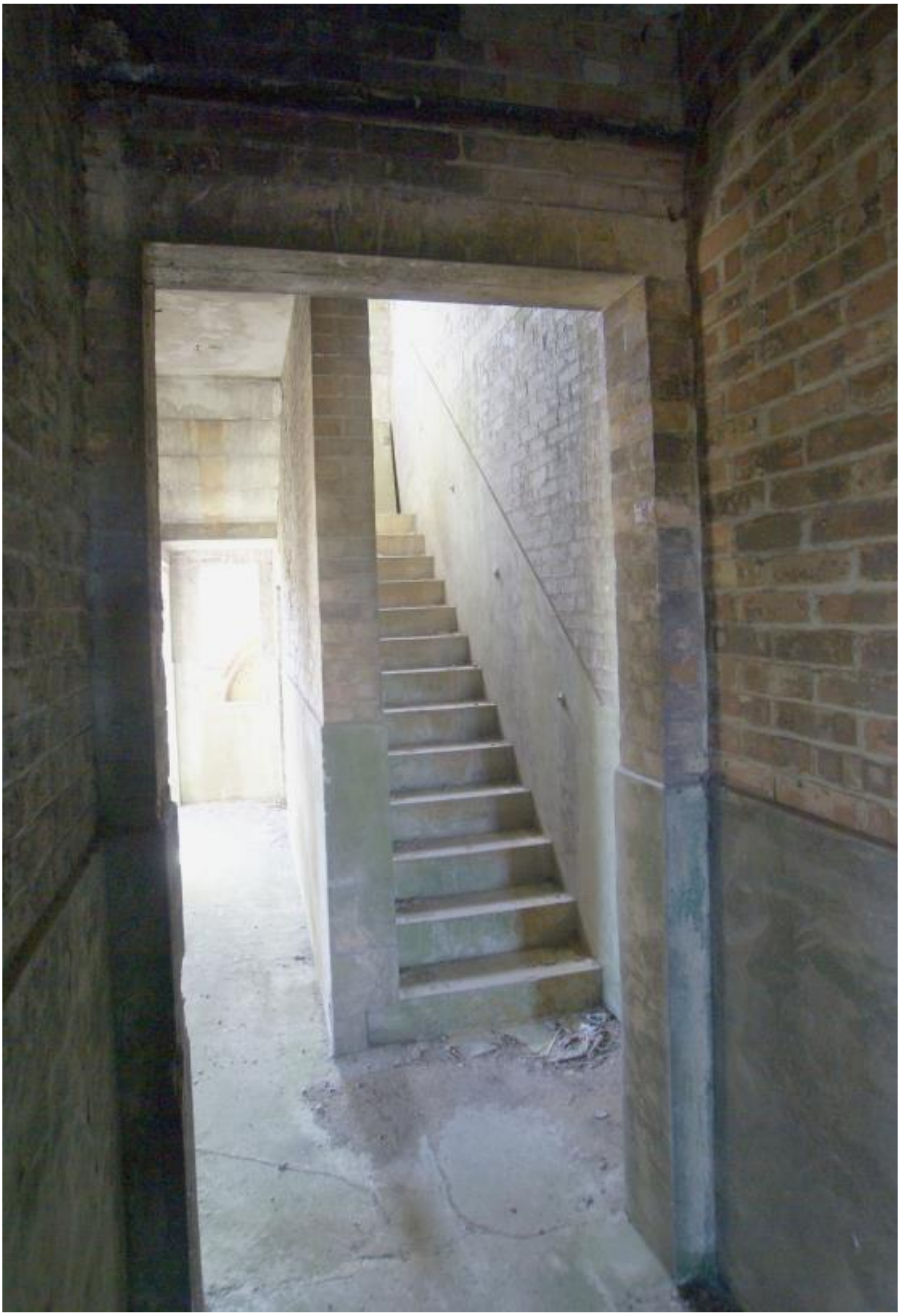


Plate 33: Shipdham – corridor and staircase (28-09-11)

## (B) First Floor

Up the stairs to the first floor landing which has a 5 in by 10 in (30 lb) RSJ above, and immediately on the right is the met officer's bedroom (11 ft 9 in by 11 ft). Following this on the same side is the control officer's rest room (13 ft 1 in by 11 ft 1 in). Back to the landing and to the side of the staircase is a narrow store room (4 ft 1 in by 16 ft) and then a large ‘L’-shaped signal office (17 ft 7 in long). This room has a 7 in by 4 in (16 lbs) RSJ above running laterally.

At the front of the building is the full-width control room (20 ft by 36 ft). In here would be the ‘aerodrome state board’, control officer's desk, plotting table, recorder table, Lorenz control panel and airfield mimic panel. On the front elevation are large sliding and folding windows. Ceiling height of the first floor is 10 ft Double doors on both side walls gave access to a 4 ft 6 in wide balcony, the perimeter of which is surrounded by gas barrel type railings.

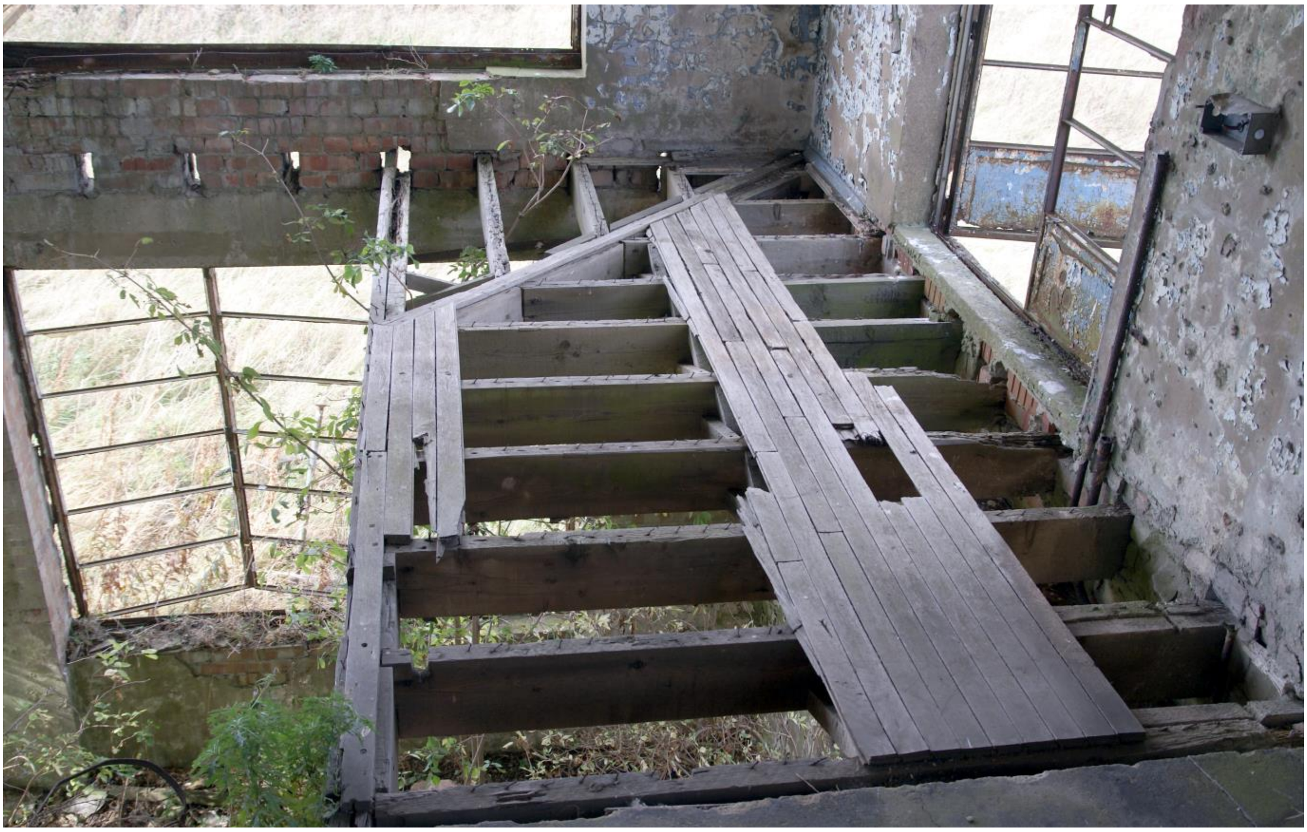


Plate 34: Wymeswold - A section of original timber floor – note the triangular corner tie-section for the balcony (02-10-11)

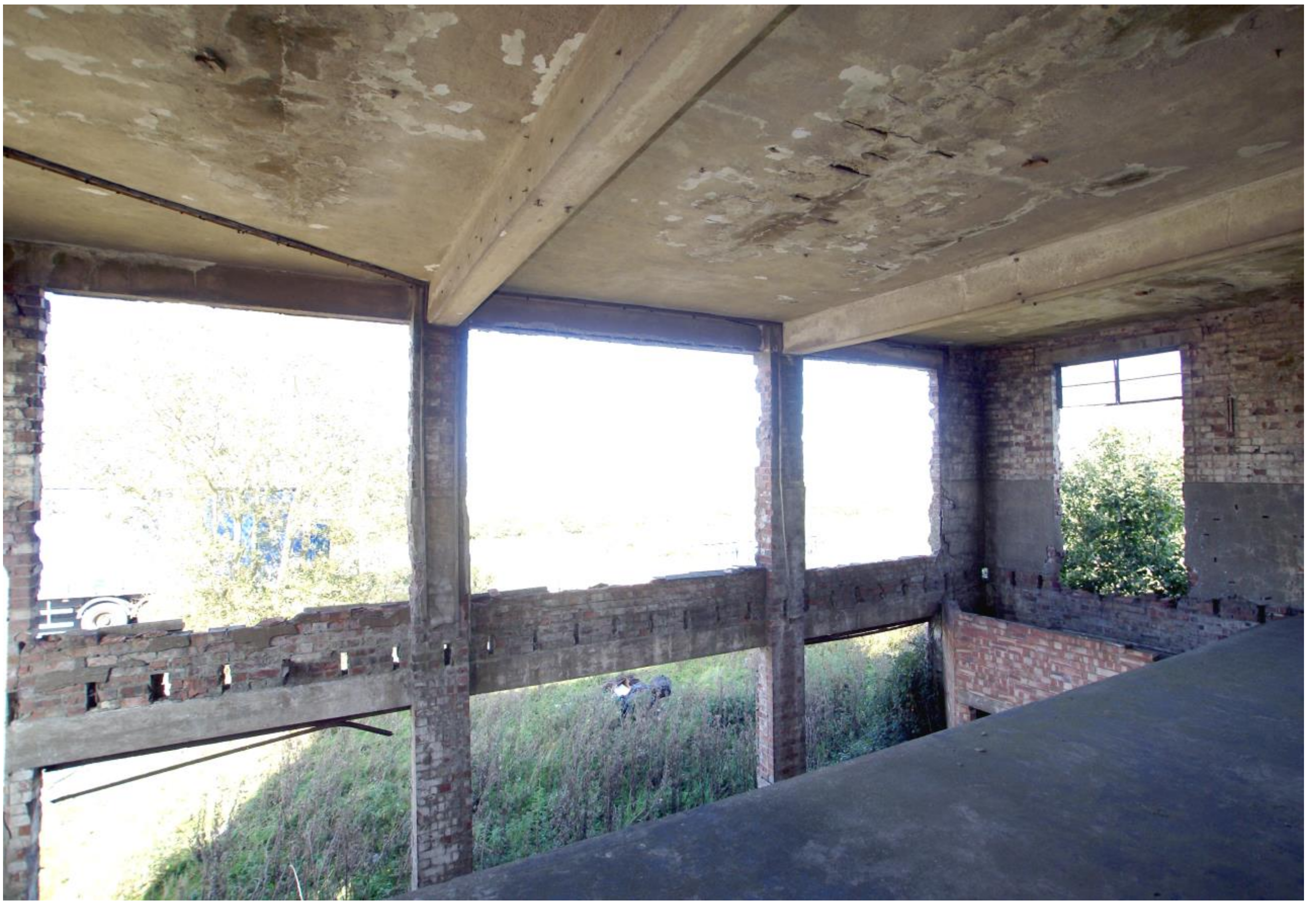


Plate 35: Shipdham – control room (28-09-11)

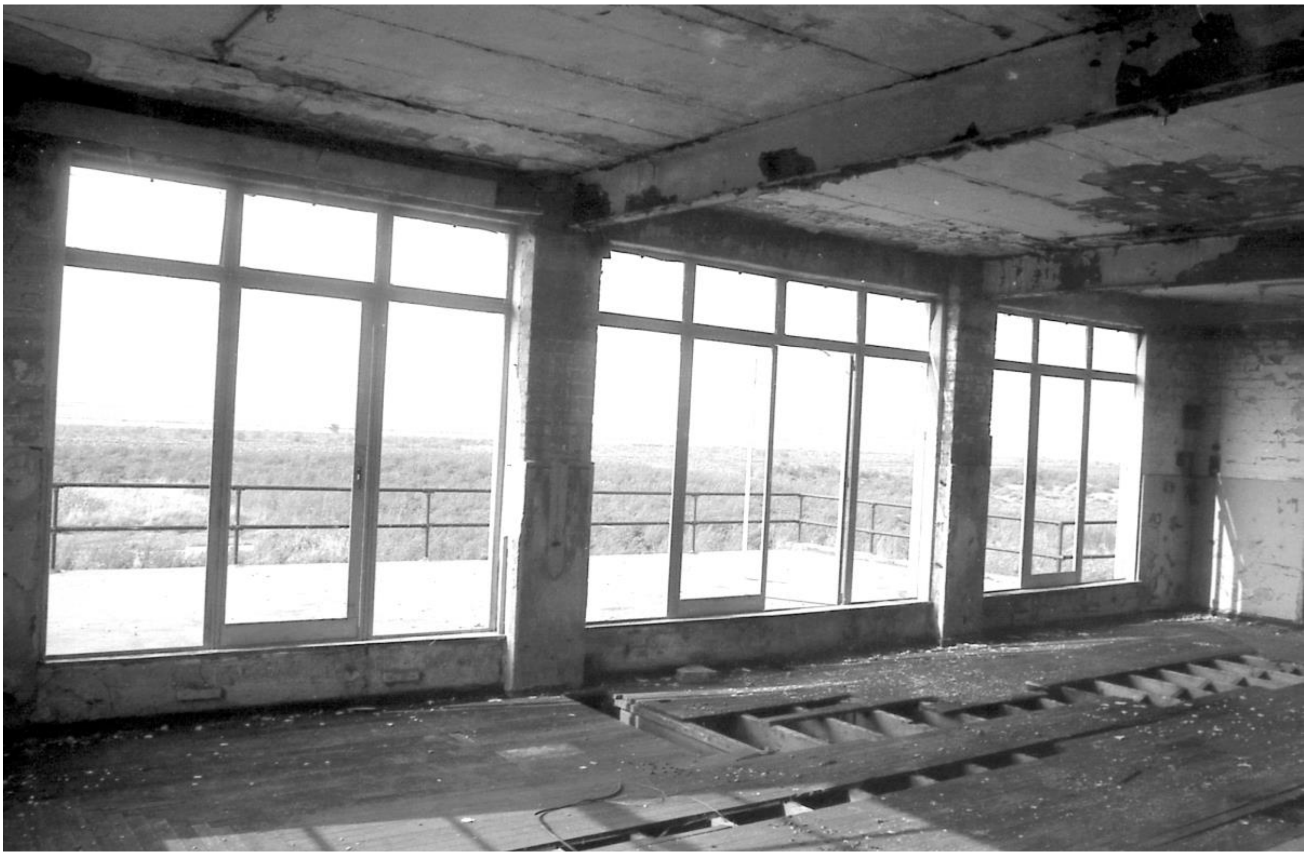


Plate 36: Bovingdon – control room (1982)

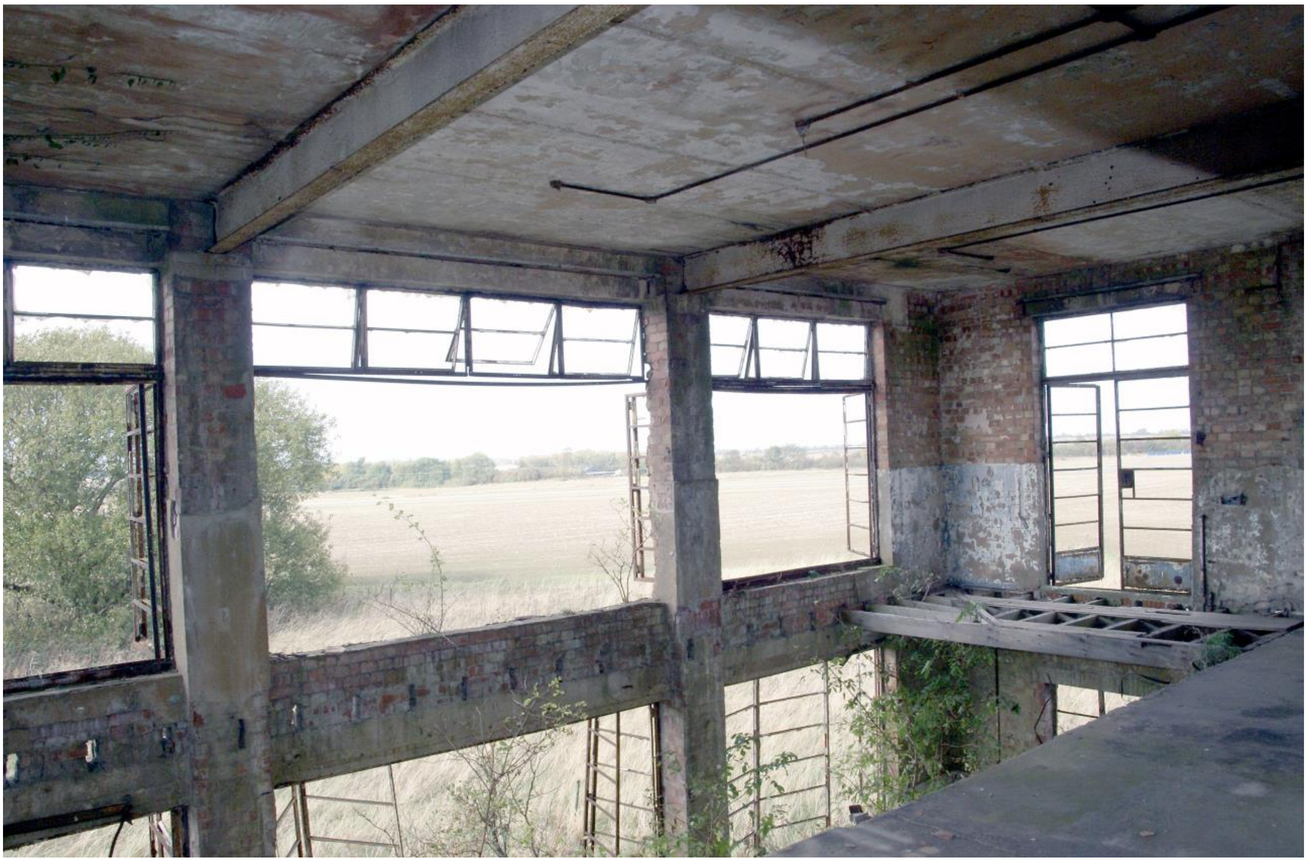


Plate 37: Wymeswold – control room – the RSJs appear to be in good condition (02-10-11)

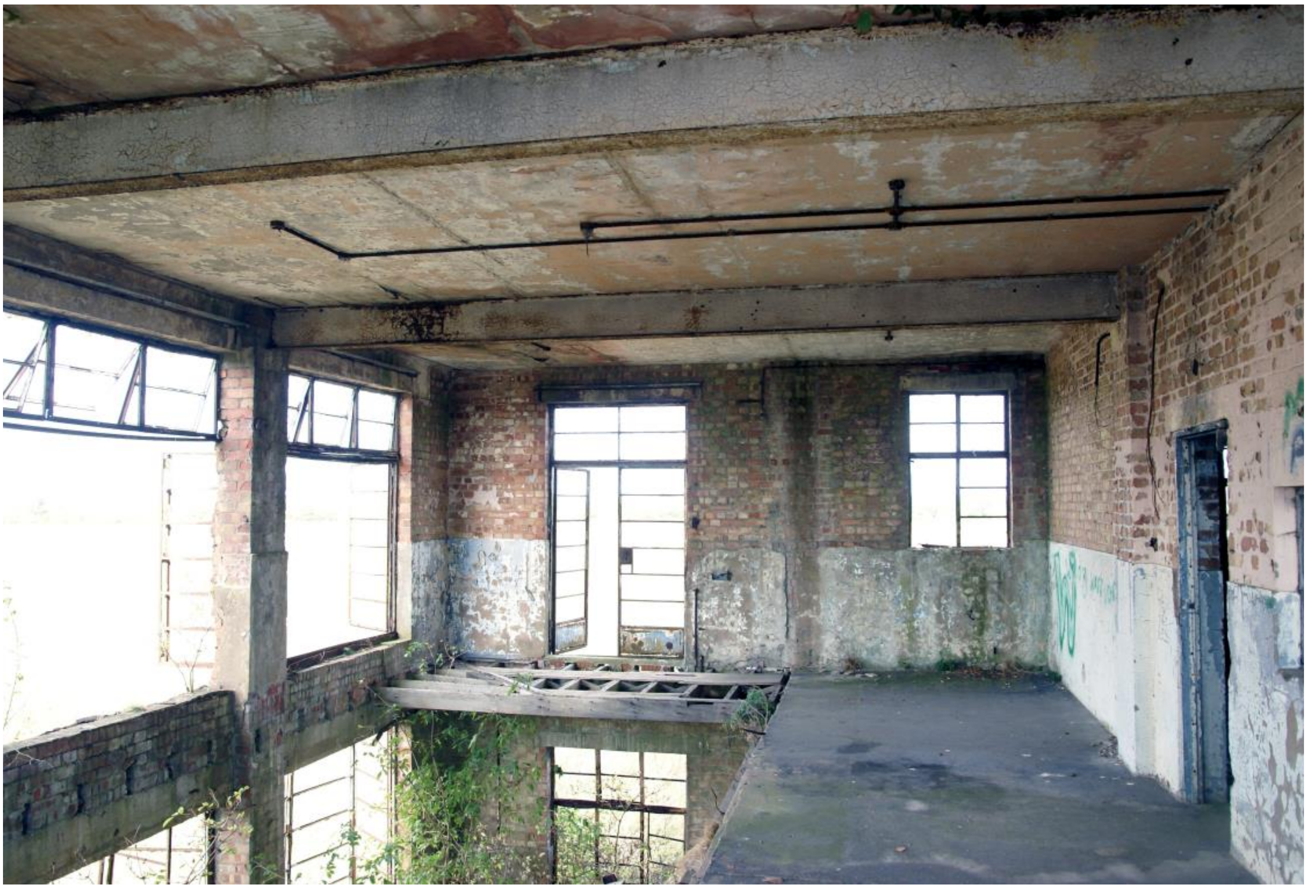


Plate 38: Wymeswold – control room with part composite floor. Note the electrical conduit on the ceiling

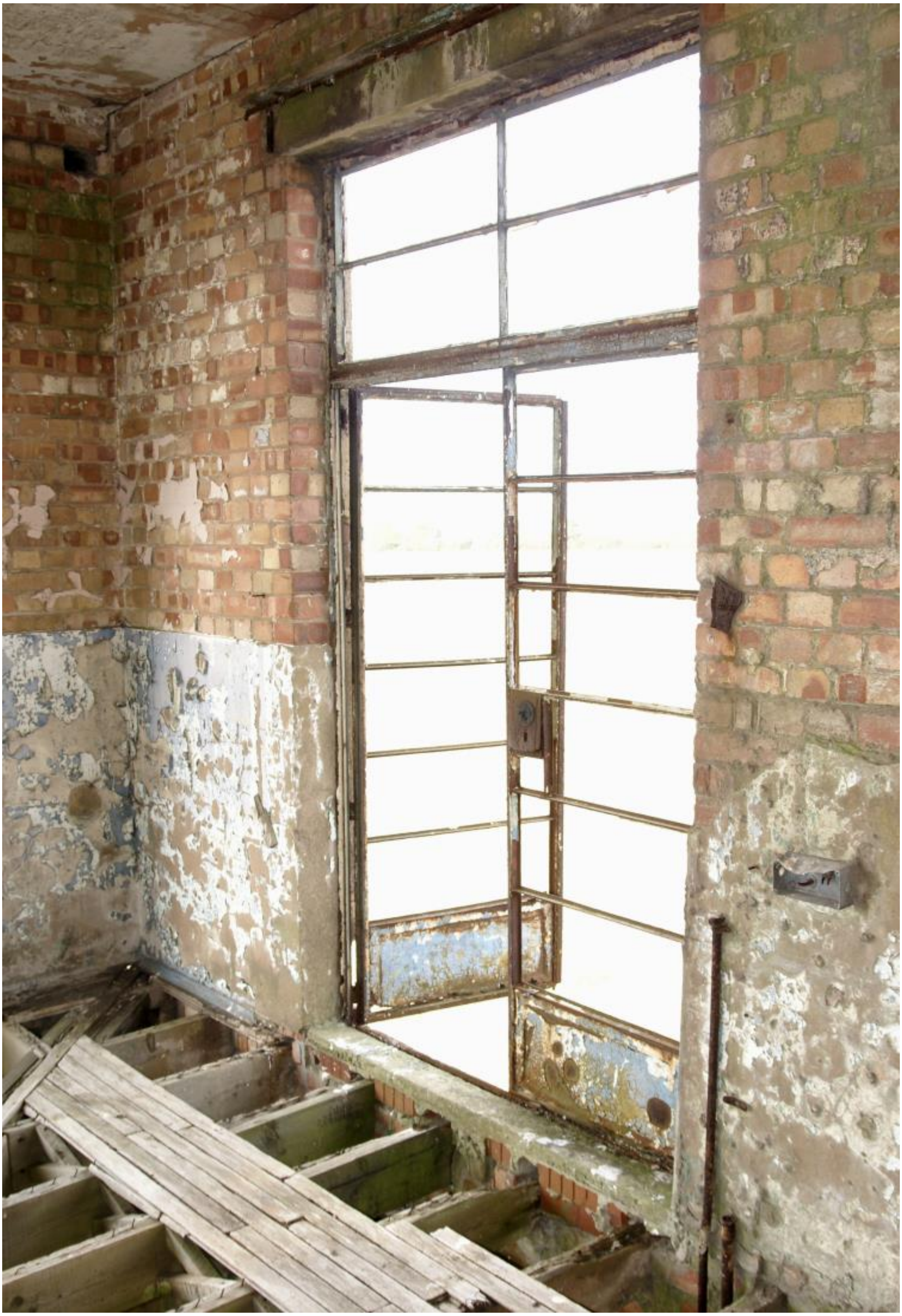


Plate 39: Wymeswold – ‘patio’ type glazed doors and fan light to balcony (02-10-11)

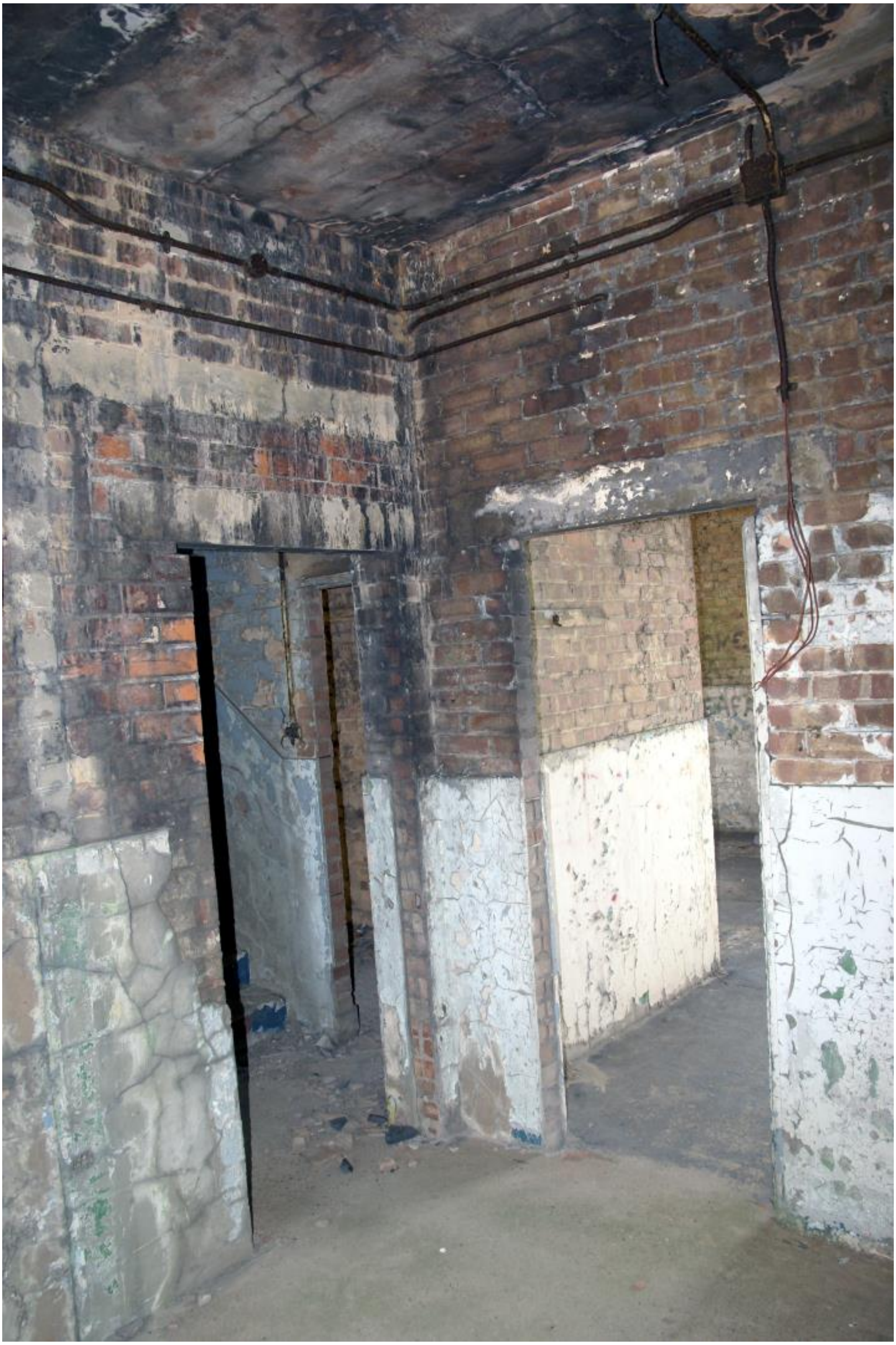


Plate 40: Wymeswold - door way to signals office and corridor (02-10-11)

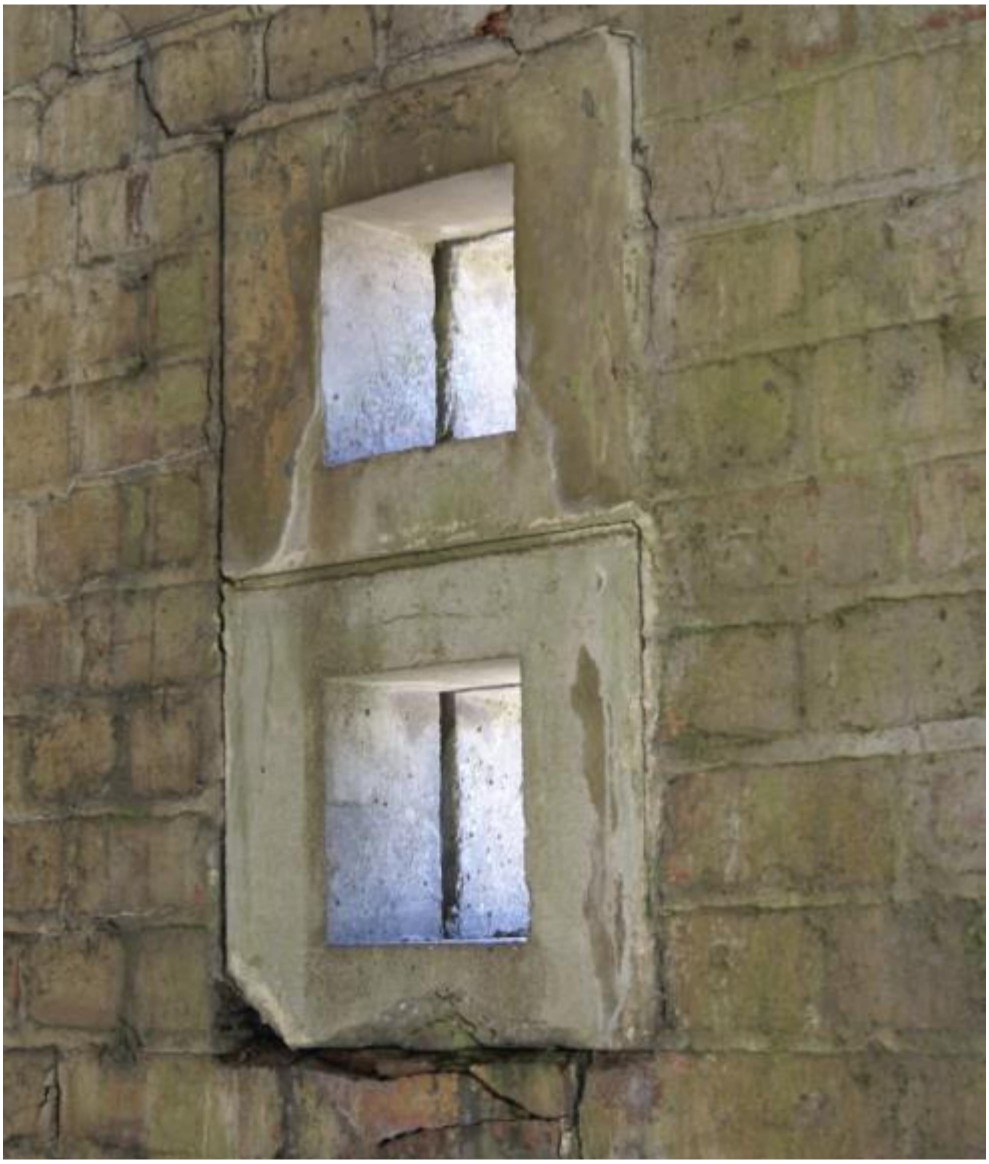


Plate 41: Shipdham – signals office showing a pair of insulating blocks. The presence of these has created a weak point in the brickwork resulting in vertical cracking (28-09-11)

(C) Up on the Roof

The staircase continued up to the second floor stairwell house where there is a hallway and double doors leading to the roof. To the left is a balloon filling room (5 ft 9 in by 11 ft). A gas pipe opening could supply hydrogen for balloon filling from the cylinder store on the ground floor. The only other room is a water tank room (4 ft 1 in by 9 ft 10 in) which is located on the left hand side.

The roof perimeter is surrounded by 2 ft 9 in high tubular steel pipe railings. A pair of precast concrete theodolite columns are located at the front of the roof.

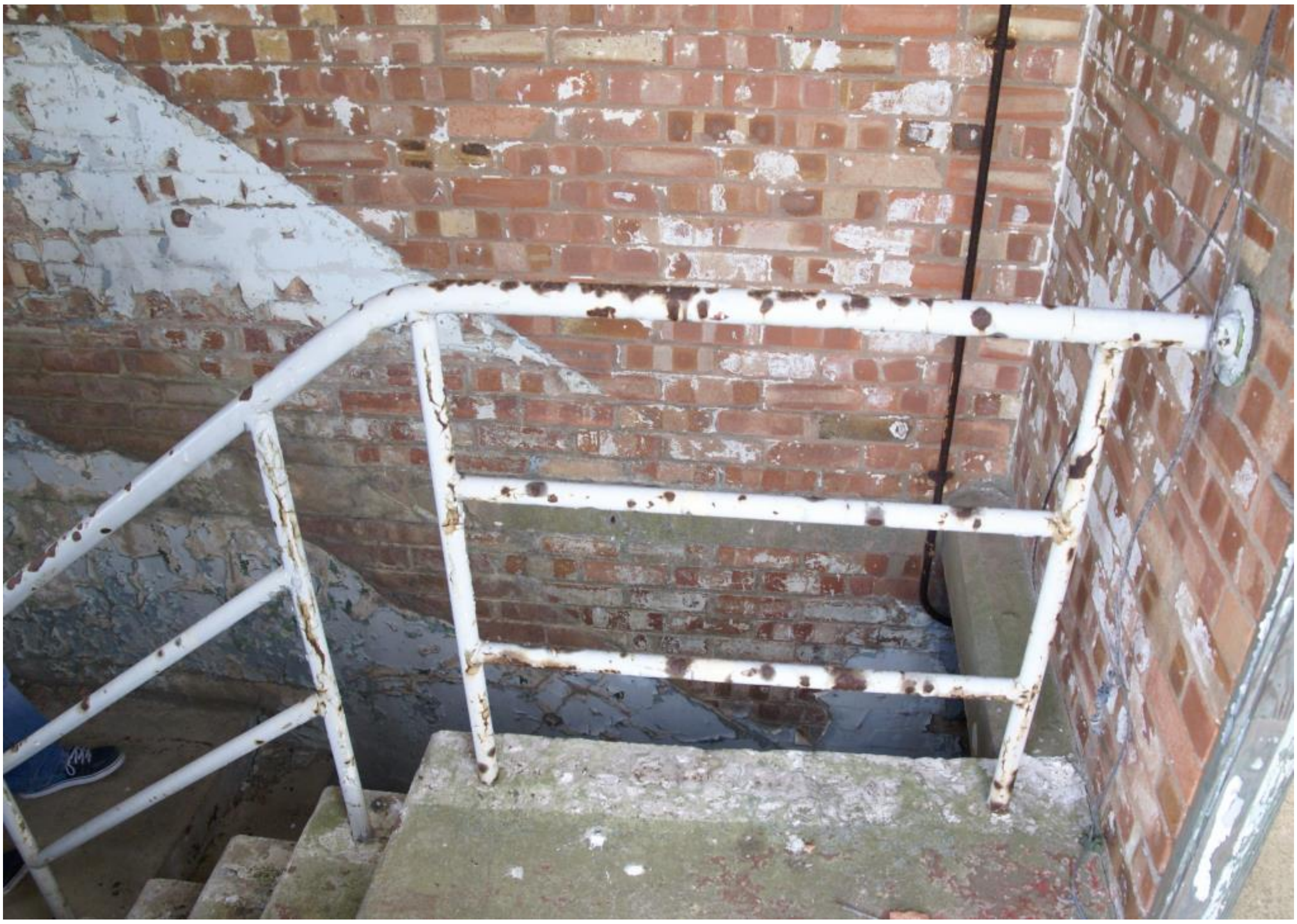


Plate 42: Wymeswold banister detail at roof entrance to stairwell. The white paint is post-war (02-10-11)

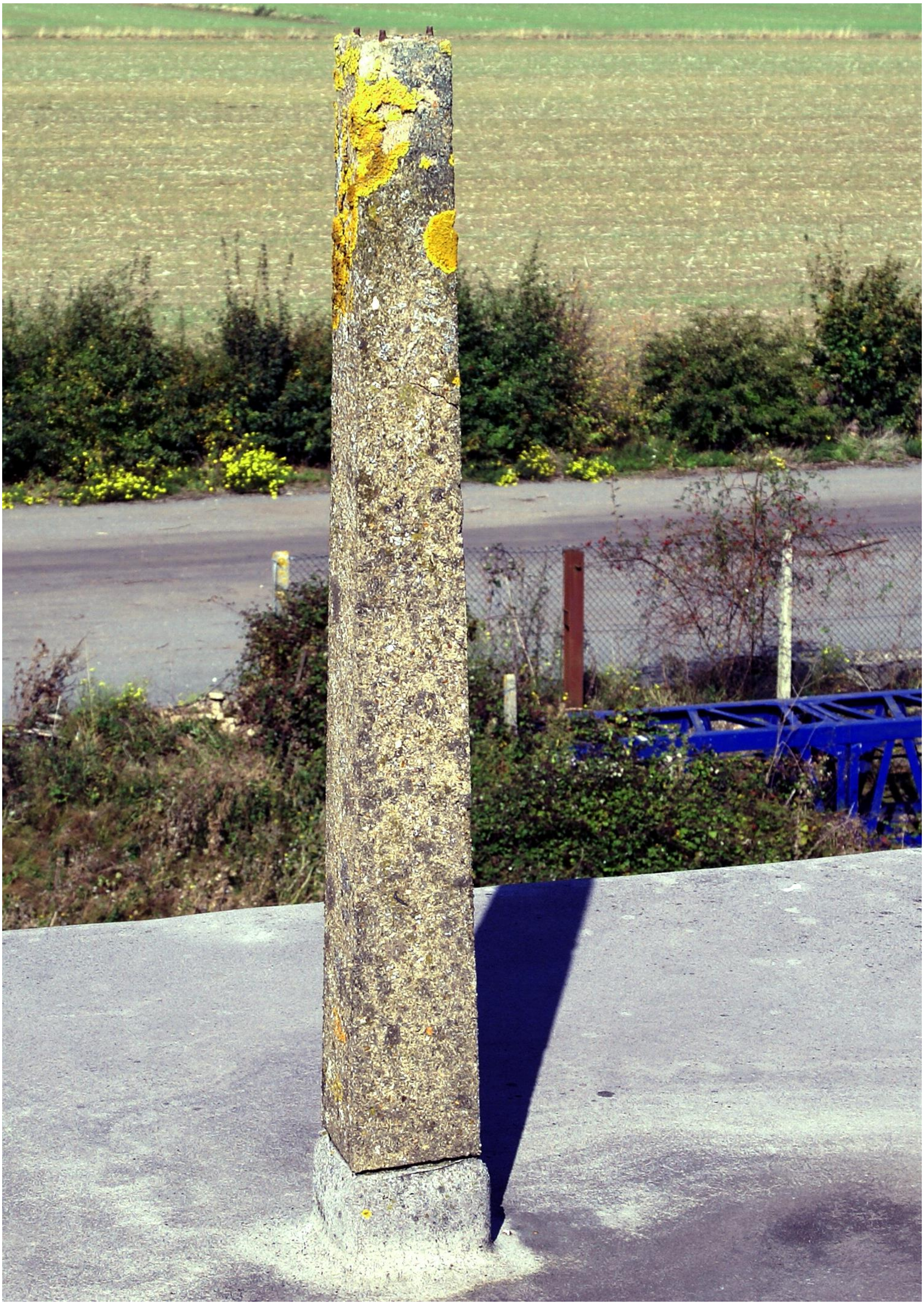


Plate 43: Shipdham – theodolite pillar (28-09-11)

## (D) Modifications and Additions

The only wartime modification was the addition of a further control room or signalling pent house. One version is to drawing 10342/42 for night operations, and this could be built straight on to the concrete roof.

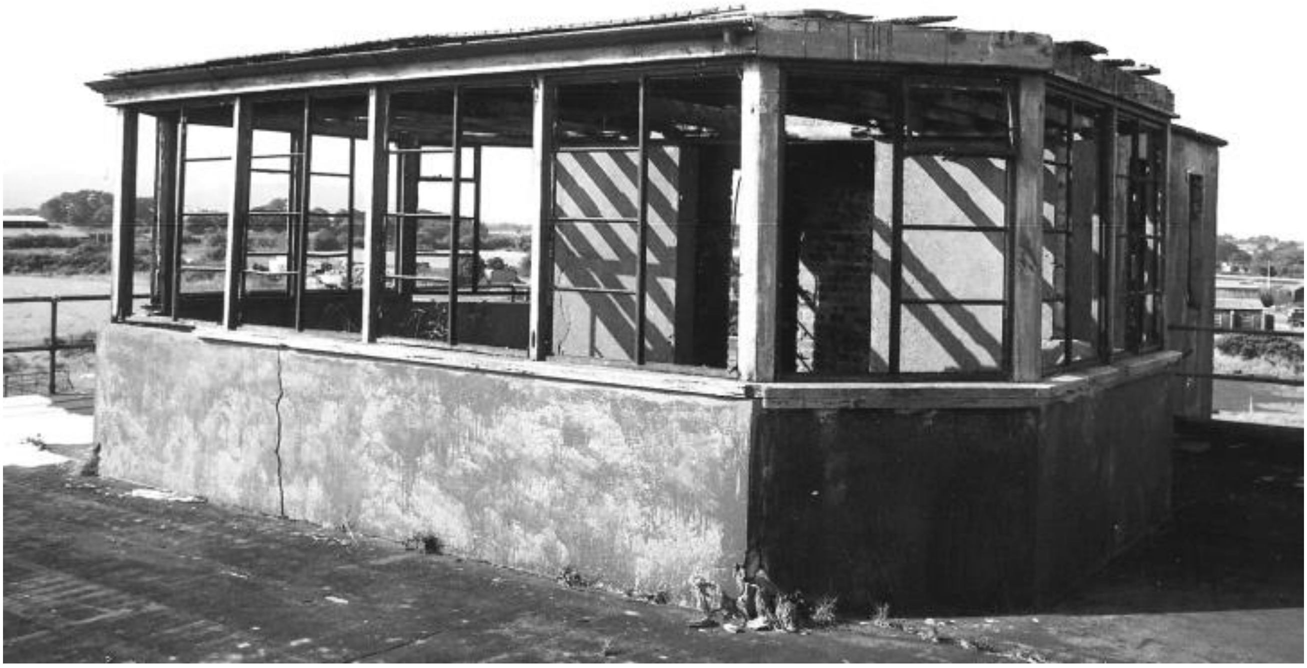


Plate 44: Andreas signalling pent house (1983)

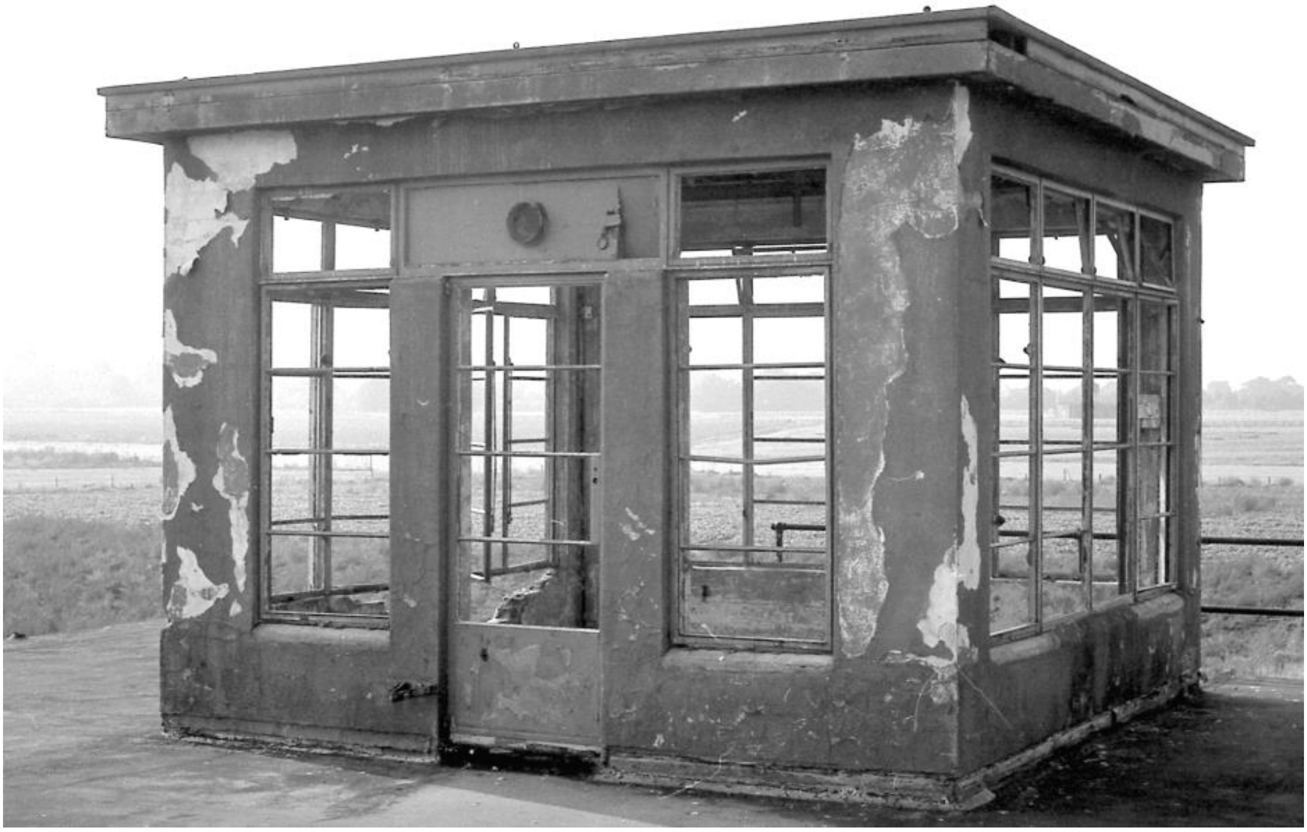
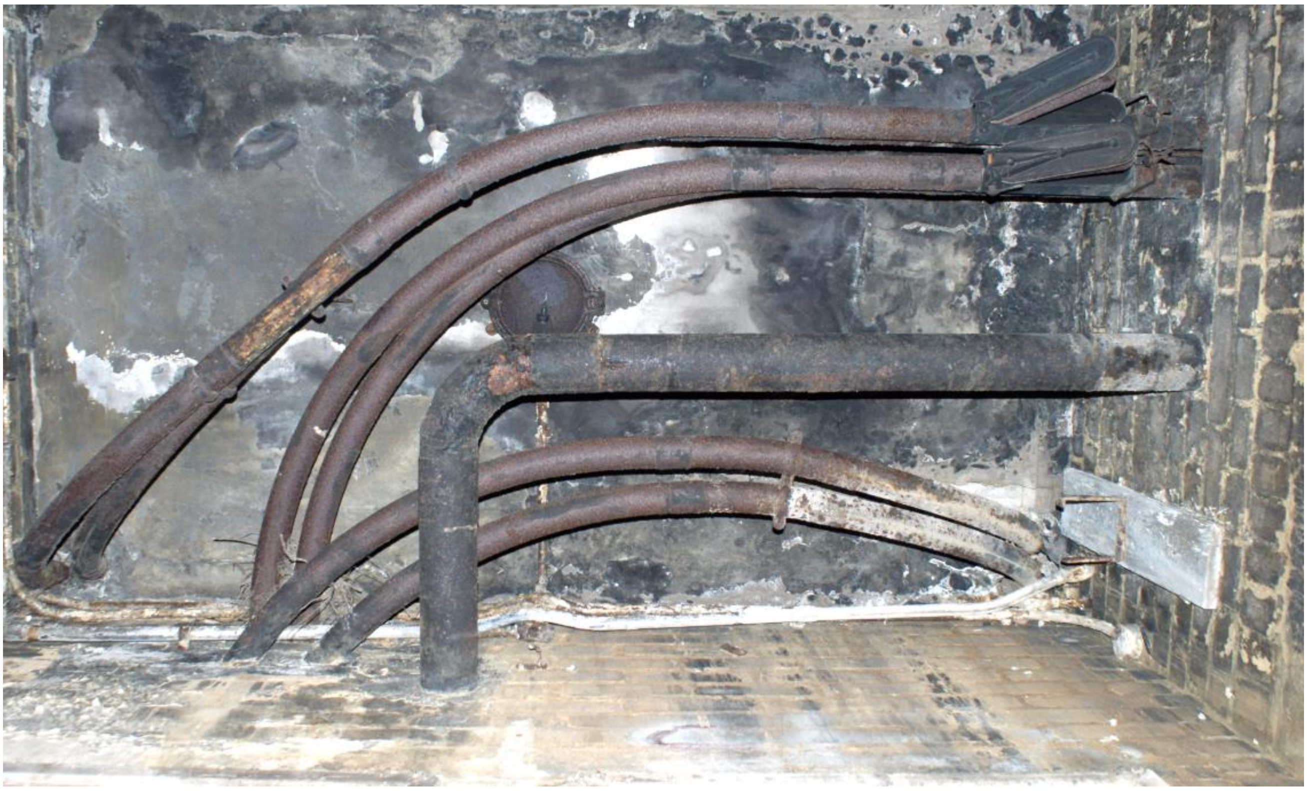
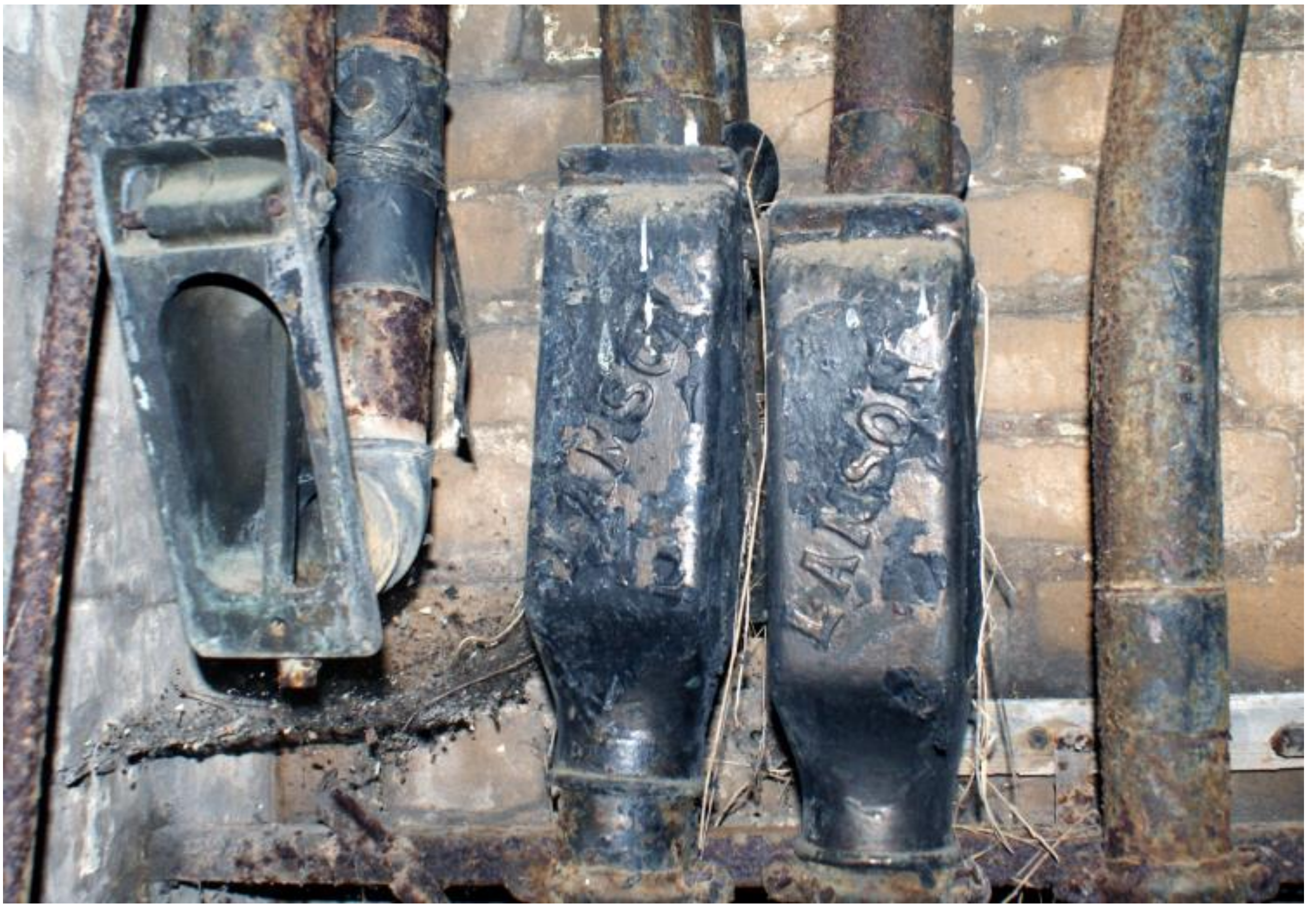


Plate 45: Bovingdon - signalling pent house or local control (1982)

## (E) Lamson tubes – pneumatic messaging service



Plates 46 & 47: (above and below) Bovingdon - Lamson tubes (corridor ceiling roof and wall arrangement)



(E) Decoration – cream and green wartime internal paint scheme.

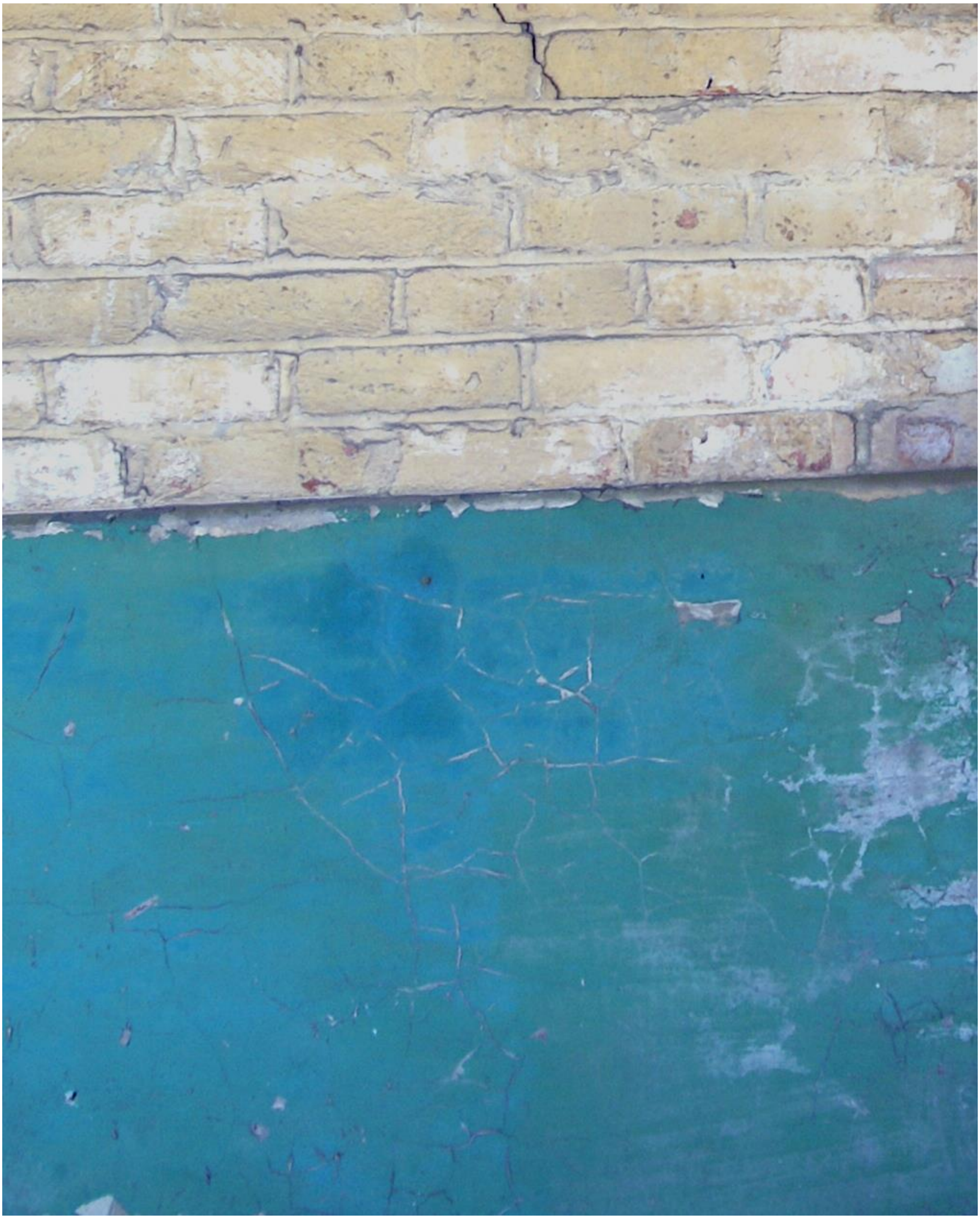


Plate 48: Shipdham – cement-rendered up to dado height followed by fair-face brick (28-09-11)

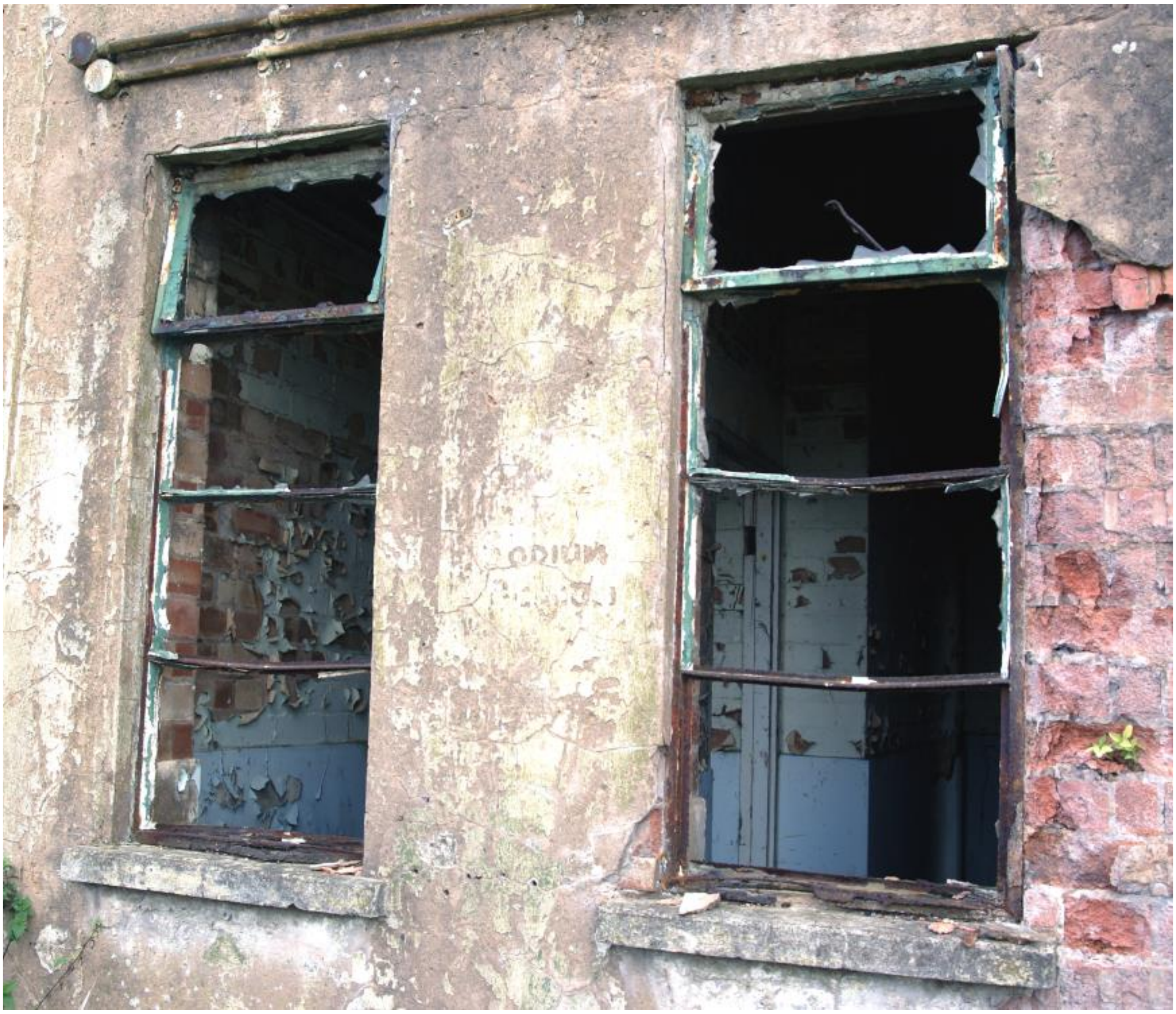


Plate 49: Wymeswold - a pair of 1 ft 8 in four-pane casements (lavatory windows) (02-10-11)

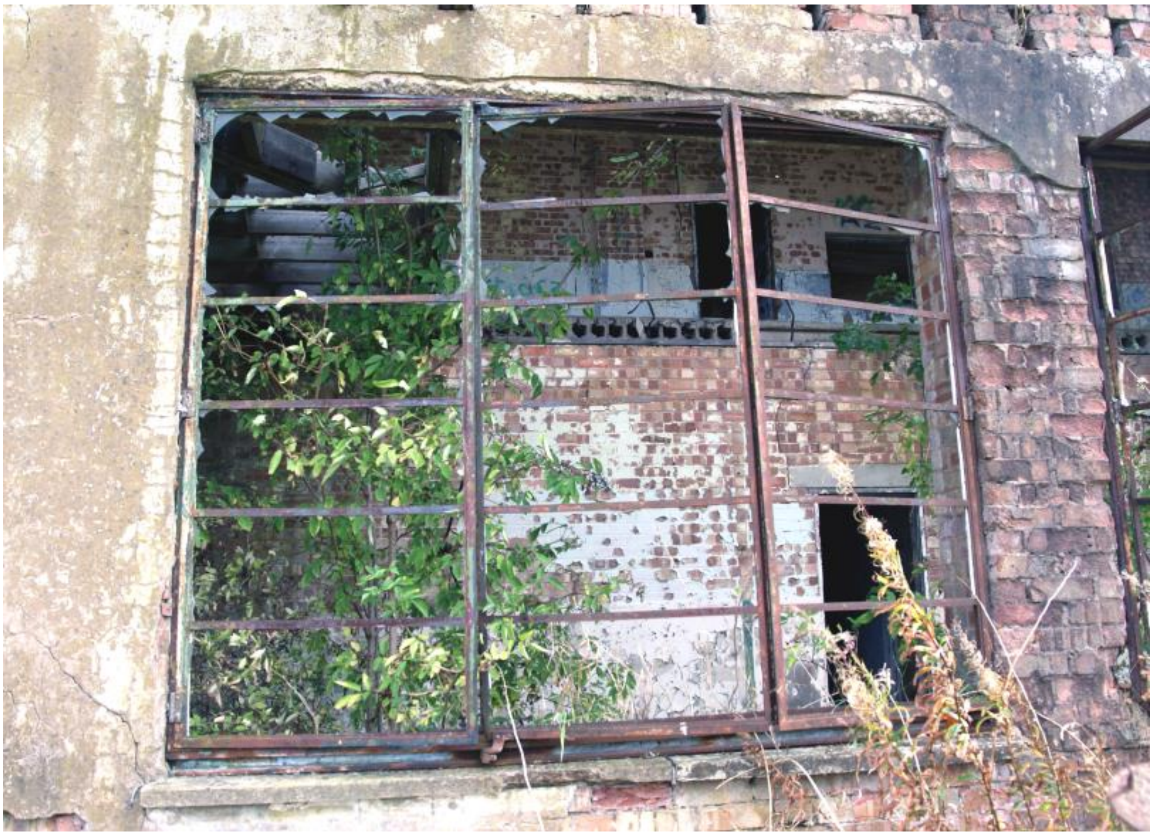


Plate 50: Wymeswold - sliding and folding windows (02-10-11)

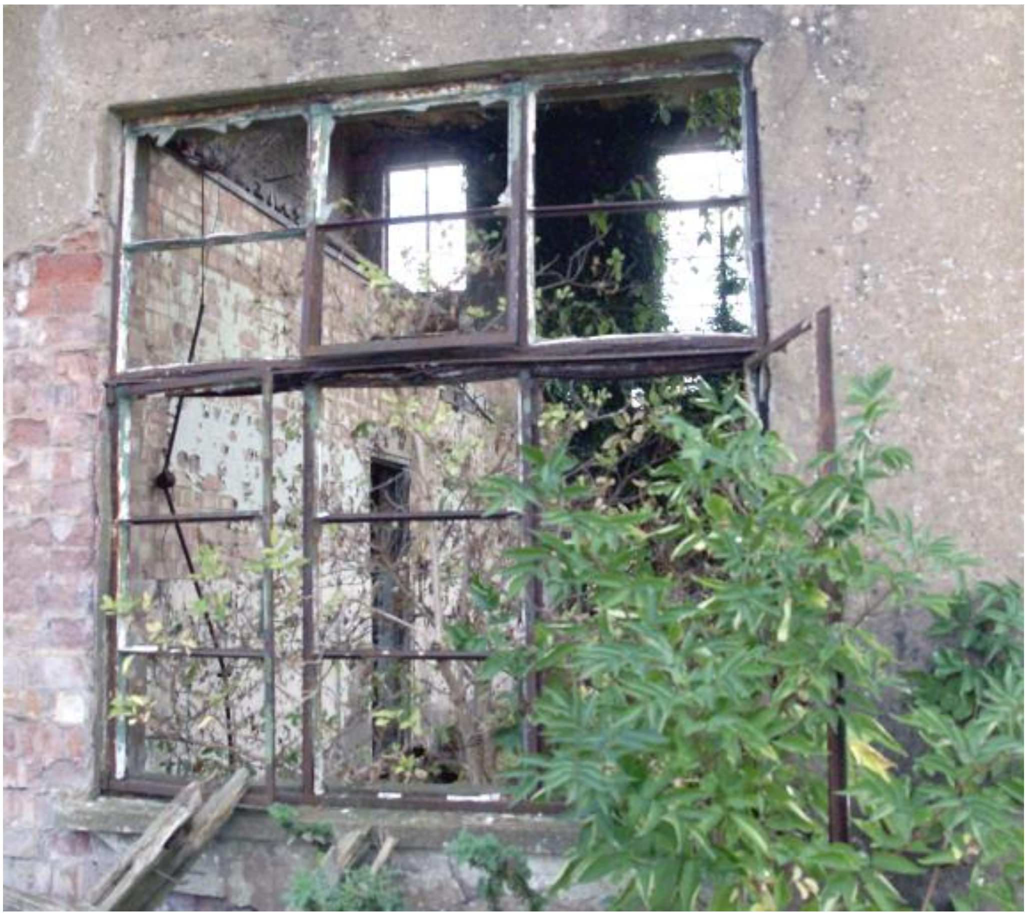


Plate 51: Wymeswold – watch office side window (02-10-11)

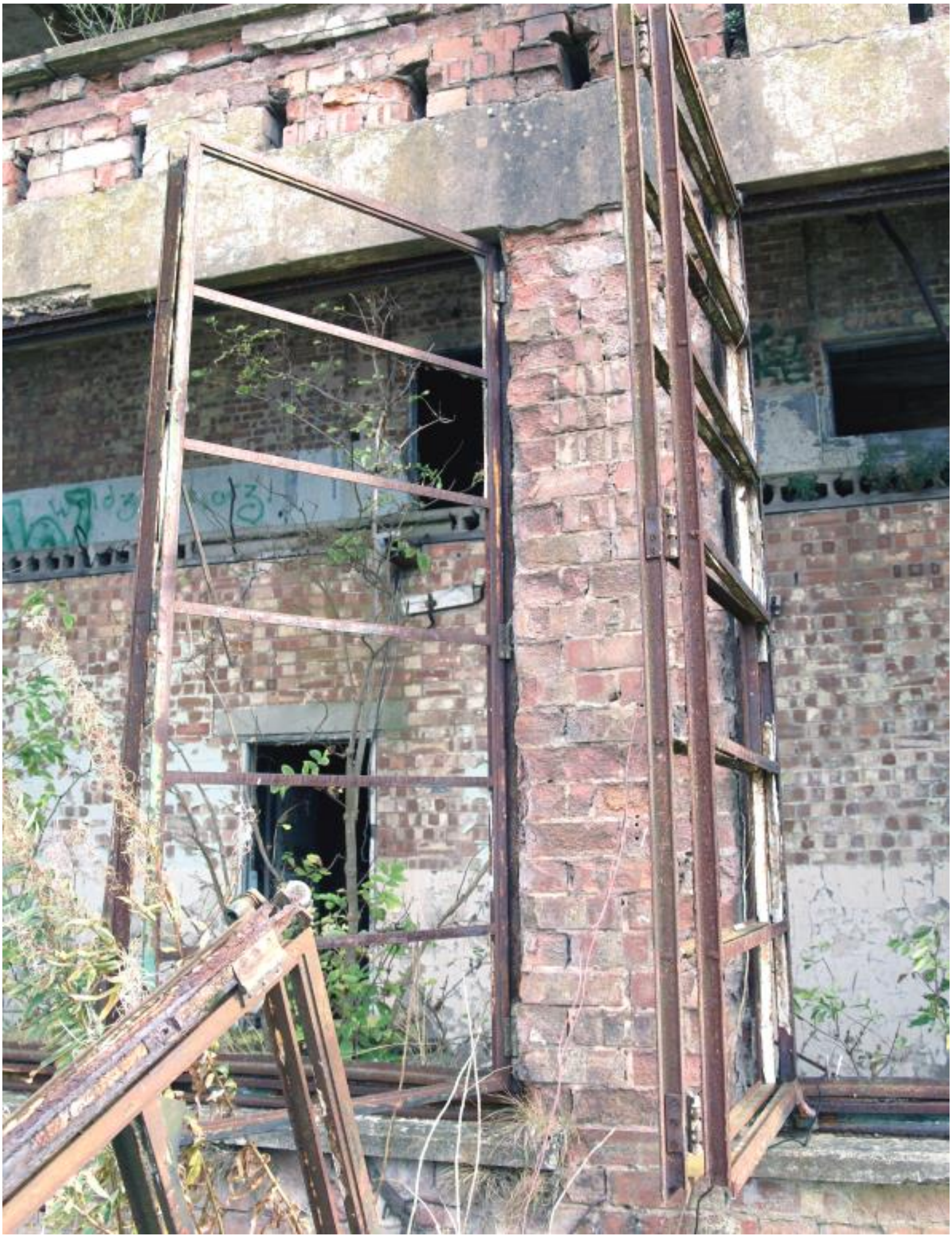


Plate 52: Wymeswold central sliding and folding windows to watch office (02-10-11)

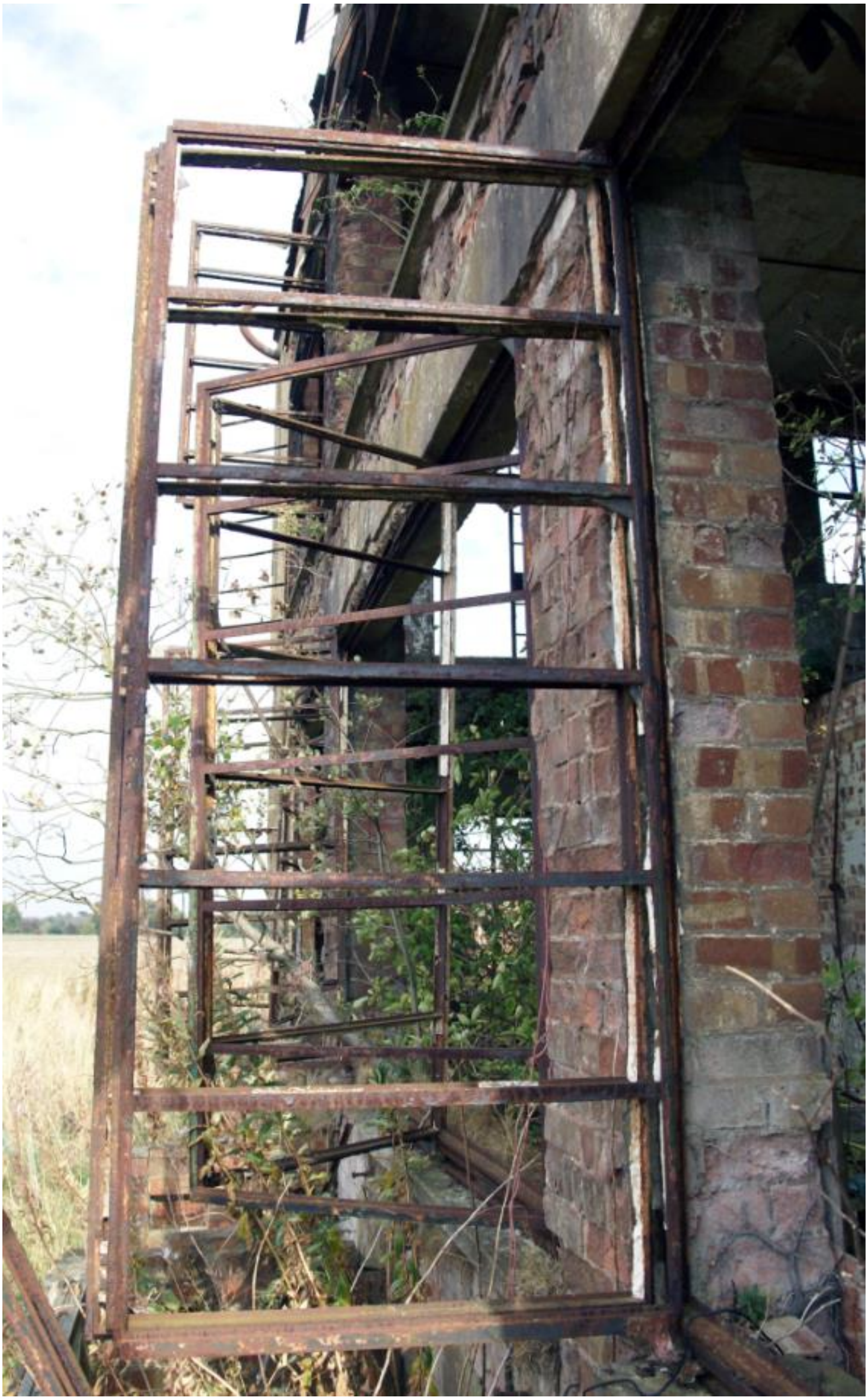


Plate 53: Wymeswold – watch office sliding and folding window (02-10-11)

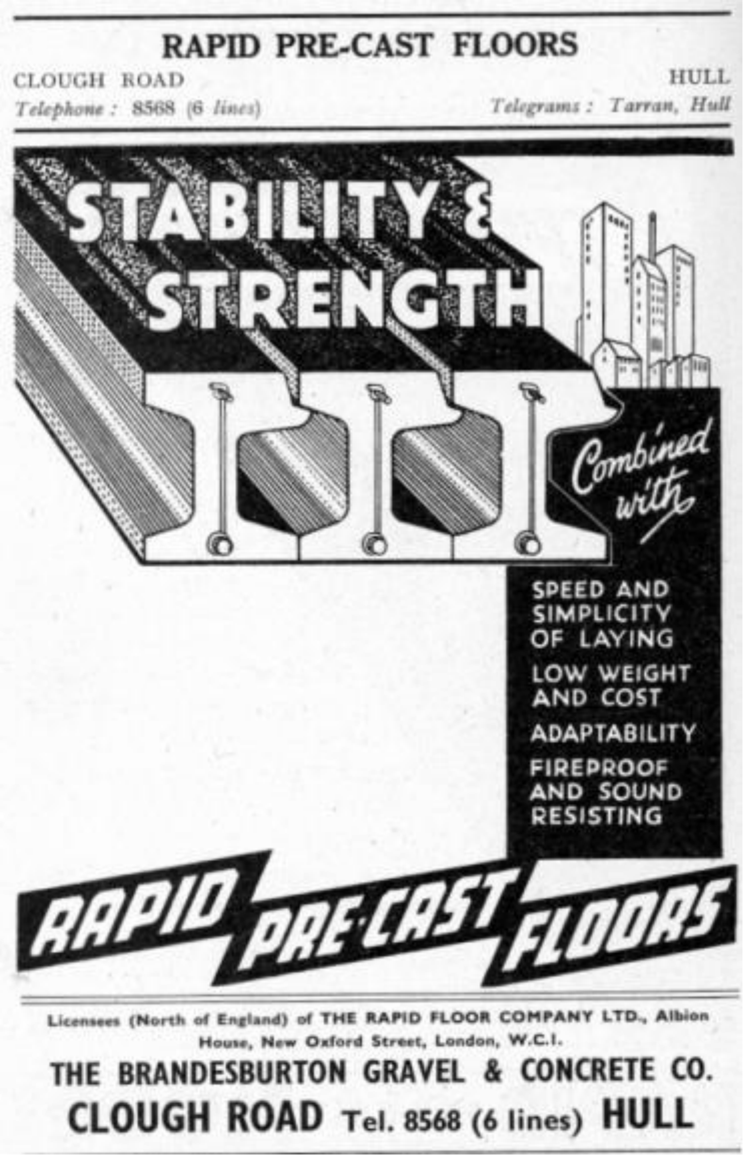
Plates 54 & 55: Wymswold – detached 2in steel tubular balcony railings (02-10-11)

## (F) Floor Construction

Bovingdon and Wymswold both have similar floor units, making up the main part of the first floor and roof. These were designed by The Rapid Floor Company Ltd, Albion House, 59 / 61 New Oxford Street, London. The system consisted of a centre less floor of ‘H’ section reinforced concrete beams supported by intermediate supports (such as internal walls and beams). It has not been possible to identify that used at Shipdham, but it is thought it is a Smith’s floor as used at Ibsley.

In 1939, the company had licensed the following firms on a regional basis to carry out the specialist installation of their units:

- Rapid Floor Construction Co, Ltd of Bath (W of England)
- John Ellis and Sons, Ltd of Leicester (N. Midlands)
- Rapid Pre-Cast Floors of Hull (N England)
- Tarmac Ltd, Ettingshall, Wolverhampton (W. Midlands)
- Mono-Concrete Ltd, 727 Thames House, (N. Home Counties)
- The Rapid Pre-cast Concrete Co Ltd, Cardiff (S. Wales)



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Combined with
SPEED AND SIMPLICITY OF LAYING
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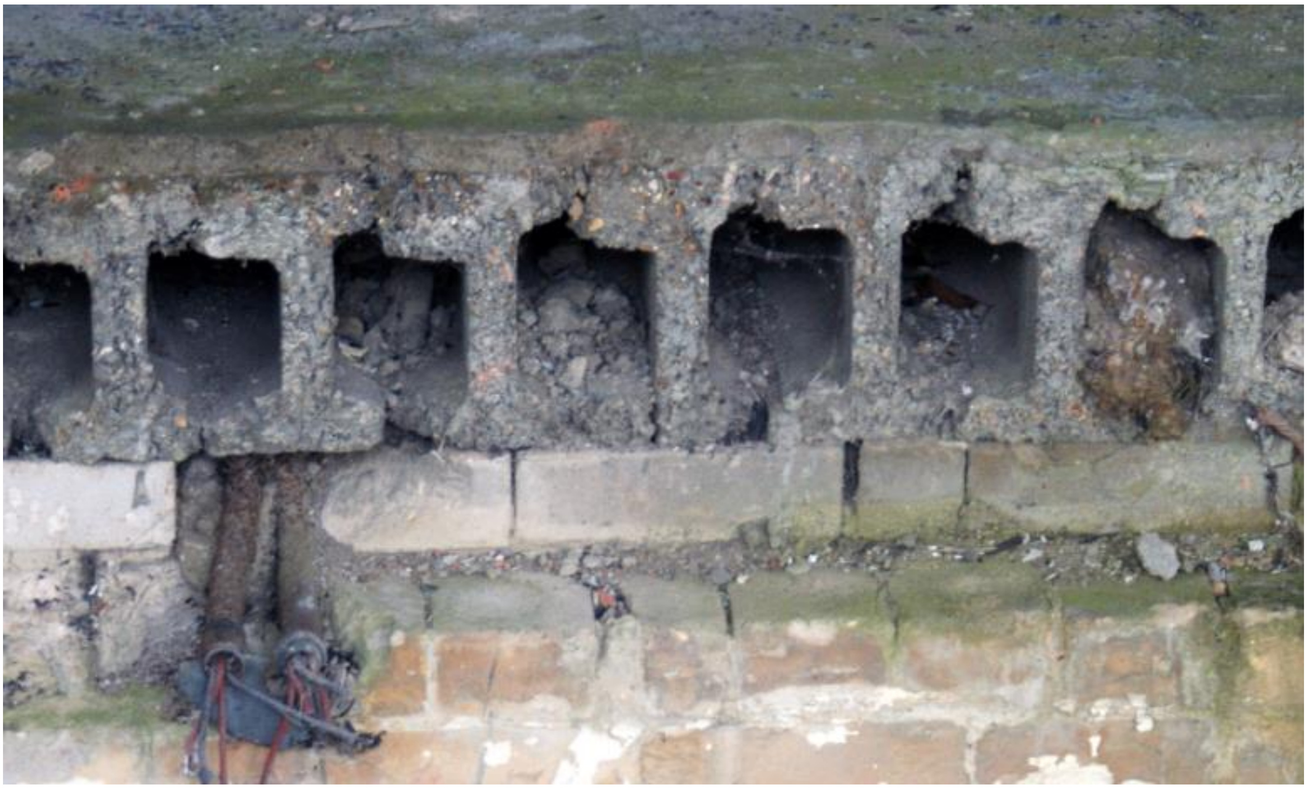
ADAPTABILITY
FIREPROOF AND SOUND RESISTING
RAPID PRE-CAST FLOORS

Licensees (North of England) of THE RAPID FLOOR COMPANY LTD., Albion House, New Oxford Street, London, W.C.1.

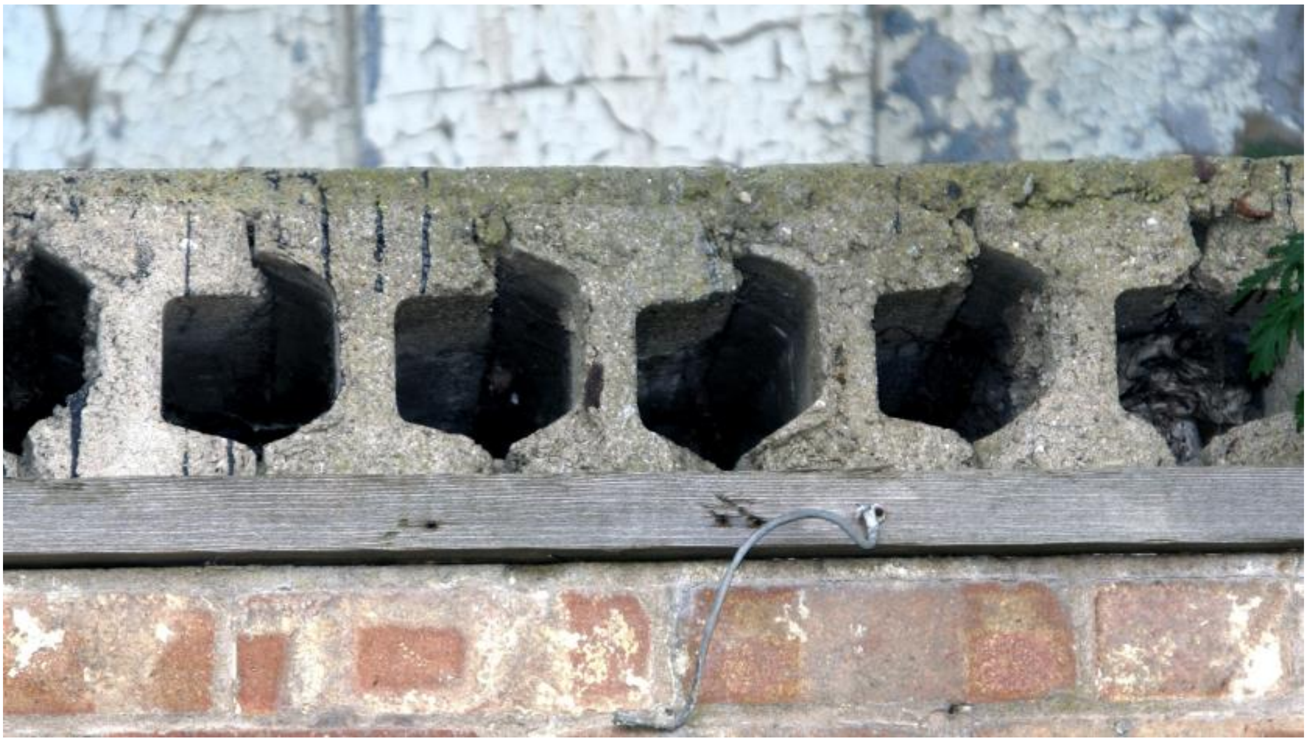
**THE BRANDESBURTON GRAVEL & CONCRETE CO.**

**CLOUGH ROAD** Tel. 8568 (6 lines) **HULL**

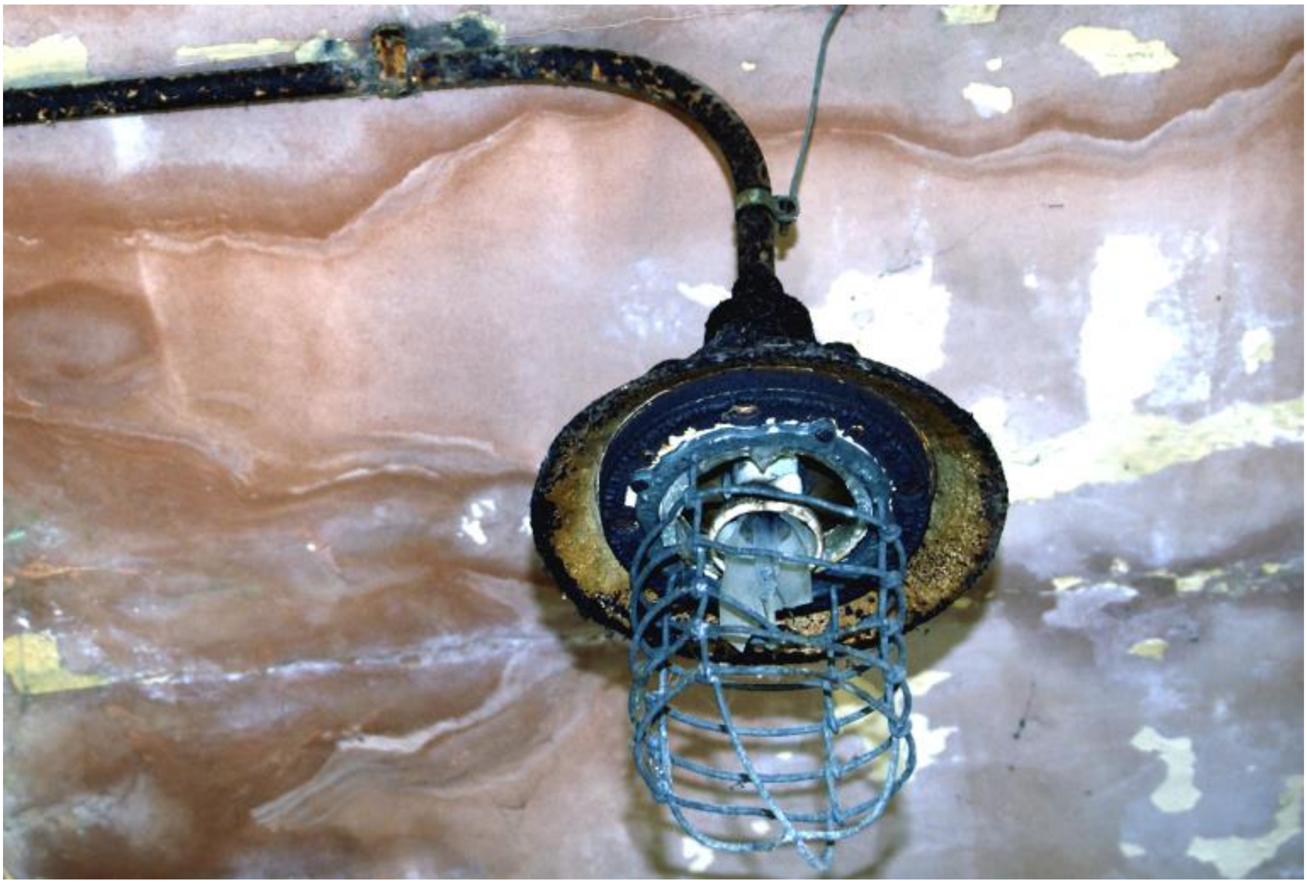
Plate 56: advert from the Concrete Year Book 1939



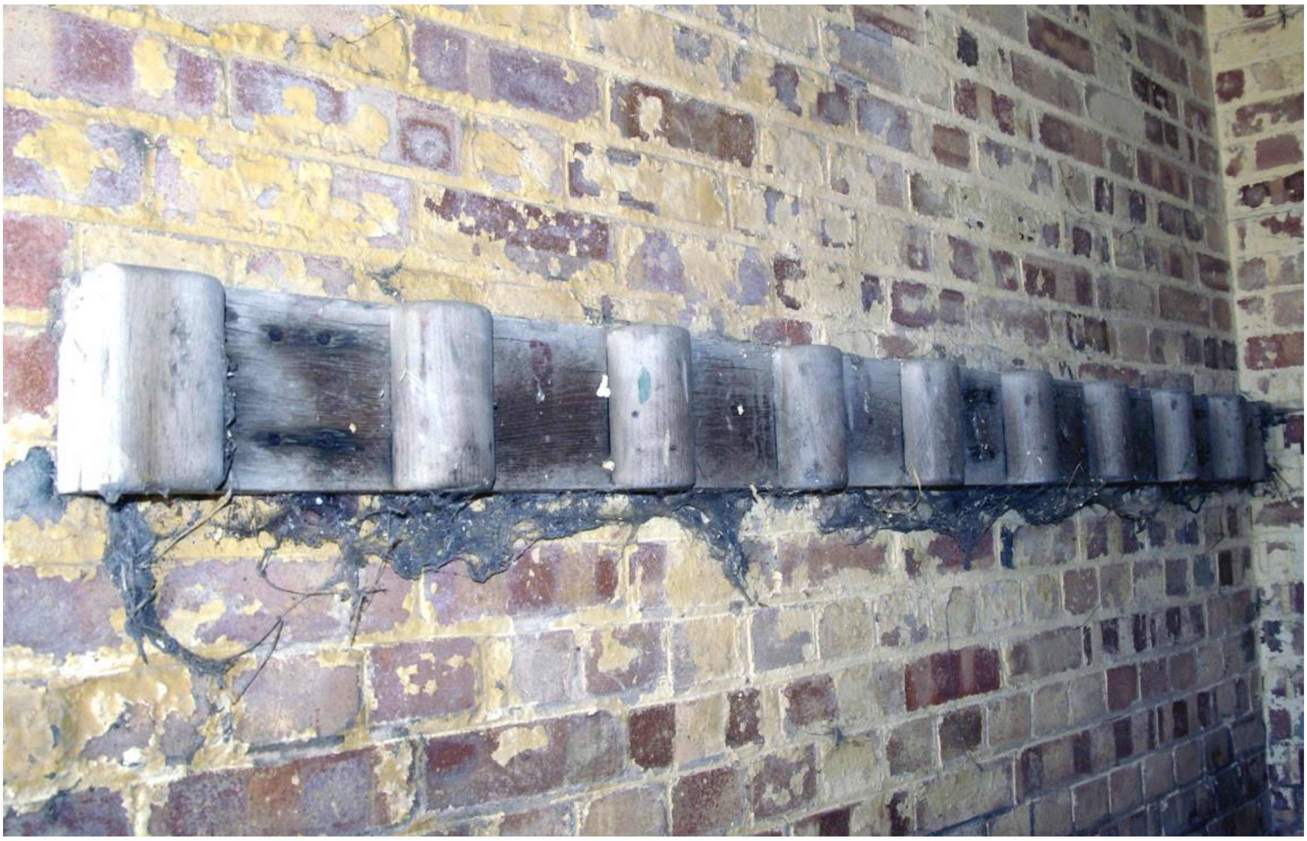
Plates 57 & 58: Floor units and cement screeding at Bovingdon (above) and Wymeswold (below)



(G) Fittings



Plates 59 & 60: Wymeswold gas cylinder room light fitting and wooden cylinder storage rack (02-10-11)



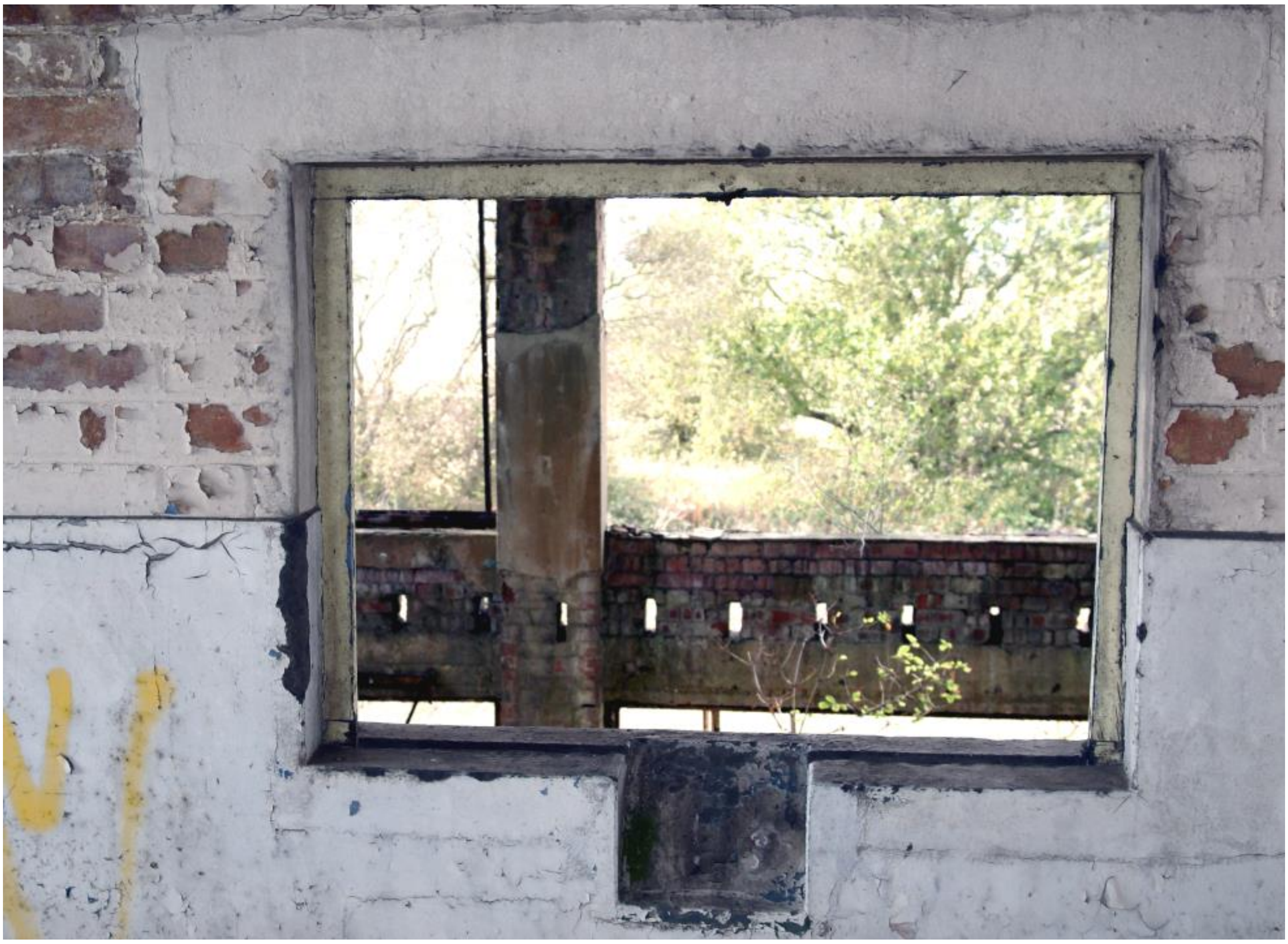


Plate 61: Wymeswold - signals office to control room hatch with angled letter slot (02-10-11)

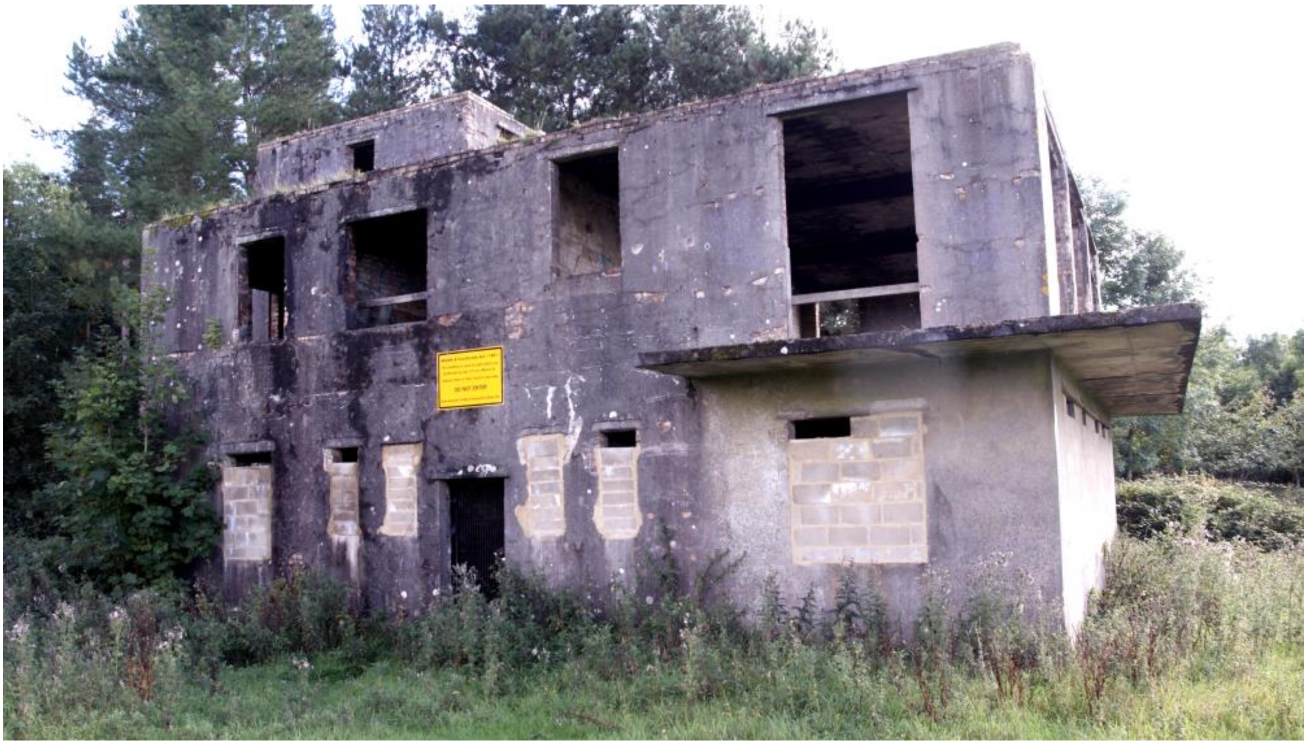


Plate 62: Ibsley – view showing the discoloured cement render over the whole of the side elevation except for that beneath the balcony which is clean (07-09-10)

## Part 5: Ibsley

### (A) Introduction

In terms of construction, the building at Ibsley appears to have gone one step further than most buildings having concrete / timber floors, as timber has been completely replaced at first floor level so that the control room floor and balcony are of concrete slab. As far as is known, Ibsley is the only station in England where this has occurred and therefore, it is one of the few that is extant in 2011 that includes its balcony – because all timber balconies have rotted and collapsed. Given that all future standard watch office designs were brick and concrete, it is presumed that the Ibsley example was one of the last, if not the last building of this family to be constructed. Another reason for its late construction may have been that the station was up-graded to Regional Control Station (RCS), being closer than the nearest other RCS at Hurn, to the bomber stream heading for NW Europe. Prior to it being built, the station had a single-storey fighter satellite watch office.

The following is known operationally:

The aerodrome was used as a rendezvous point for aircraft flying from bomber bases in Norfolk, attacking enemy targets in Northern France Below is an extract from the West Raynham ORB for 17-04-42 involving Bostons of 107 Squadron:

*14.36 to 19.00. hours Two boxes each of six Boston IIIs (AL280 'A', AL284 'B', AL702 'F', AL285 'H' , W8388 'J', AL290 'K', Z2179 'O', AL744 'Q', W8287 'U', W8373 'W', Z2255 'L' & AL288 'K') of 107 Squadron with fighter cover were despatched to attack ships in Dry Docks 5 and 6 at Cherbourg in good visibility. Rendezvous was made at Ibsley at 15.30 hours. The first box of two formations of three aircraft each bombed at 12,000 ft on a course of 320 degrees, dropping 24, 500lb (twelve, fused TD 0.12 seconds) bombs. The second box each followed about 600 yards behind at 11,800ft, dropping a similar bomb load on the same course. Bomb bursts were reported between Docks 3 and 5 and others probably from the second box, NW of Dock 3. Considerable inaccurate flak was experienced over the target as well as crossing the coast when coming in. During a period of flak the rear formation of the second box was attacked by several Bf 109s and No.3 was hit, causing it to break off under control and loose height flying towards the sea with one engine on fire. This aircraft ( 'L') is missing. An air gunner believed he saw one of the crew bail out from this aircraft overland, but this cannot be corroborated. One FW 190 is claimed as damaged.*
*Photographs taken during this operation, show bombs bursting on the sheds east of the Basin Napoleon III, in Dry Dock 3 and between Dry Docks 2 and 3. Bombs were also seen bursting in the Petite Rade, Avant Port and Bassin Charles X. Missing crew (X2255 'L') P/O Ashford, P/O Grills & Sgt. Gardiner.*

Below is another example, on 18-01-43 by the same unit, flying from West Raynham, but this time the mission was abandoned:

*12.27 to 14.39 hours. Six Boston IIIs (AL719 'C', W2286 'O', W8330 'E', AL752 'G', W8302 'J' & AL738 'B') of 107 Squadron were despatched to rendezvous at Ibsley with fighter cover, to attack shipping at Cherbourg. All aircraft abandoned the task at 13.04 hours over Ibsley owing to 10/10ths cloud and receipt of recall from Group.*

### (B) Ibsley General Condition

Overall the building's exterior walls survive in fairly good condition with most of the cement rendering in place and for this reason it has fared better than both Shipdham (where the walls have not been re-rendered) and Wymeswold. But the roof is very poor and consequently its overall interior condition is not as good as the other two buildings. Both ceilings have large patches of damp, either caused by the lack of any asphalt on the roof or by the wind driving rain into the building from the large window openings. Interestingly, the rendering under the balcony is in better condition and appears cleaner than rendering elsewhere on the building which has a black colour (see Plate 58). The interior has also suffered from graffiti, to a far greater extent that the other buildings. Overall the impression of the building's condition is poor.

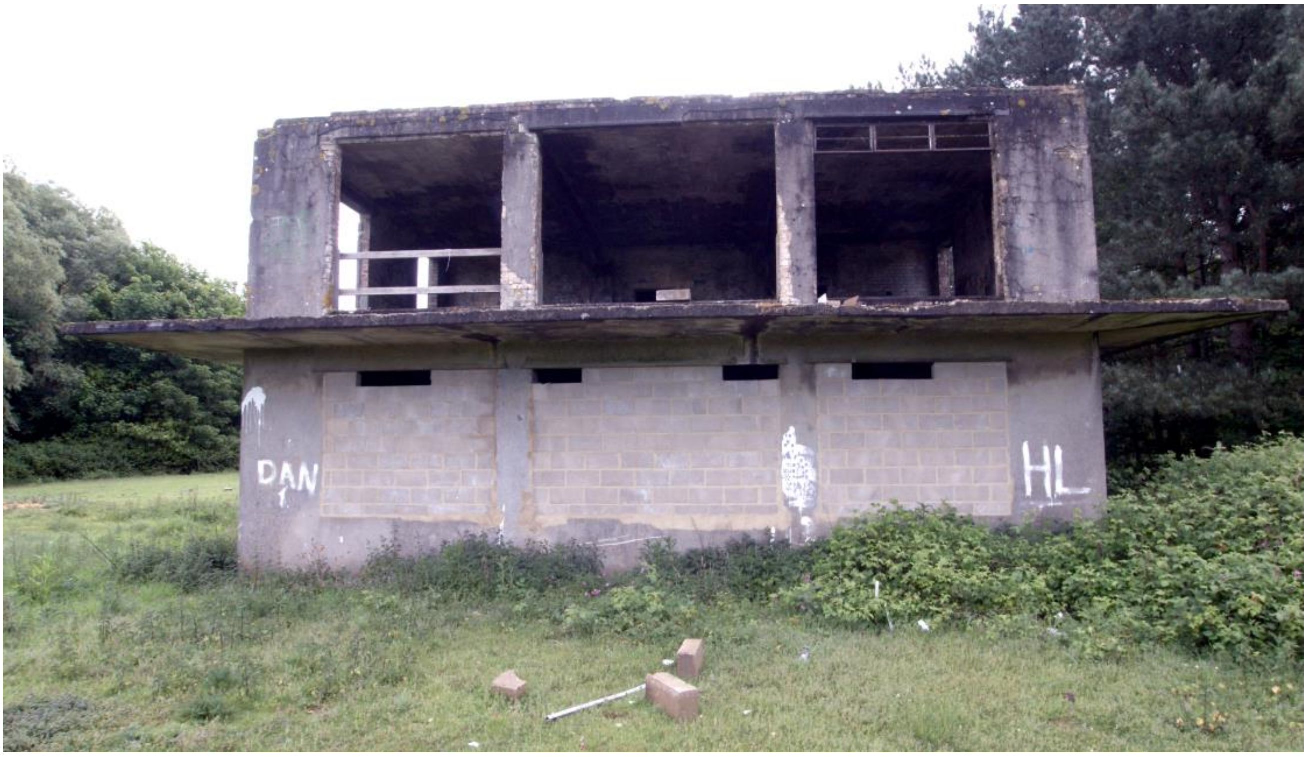


Plate 63: Ibsley watch office with meteorological section 518/40 front elevation (07-09-10)

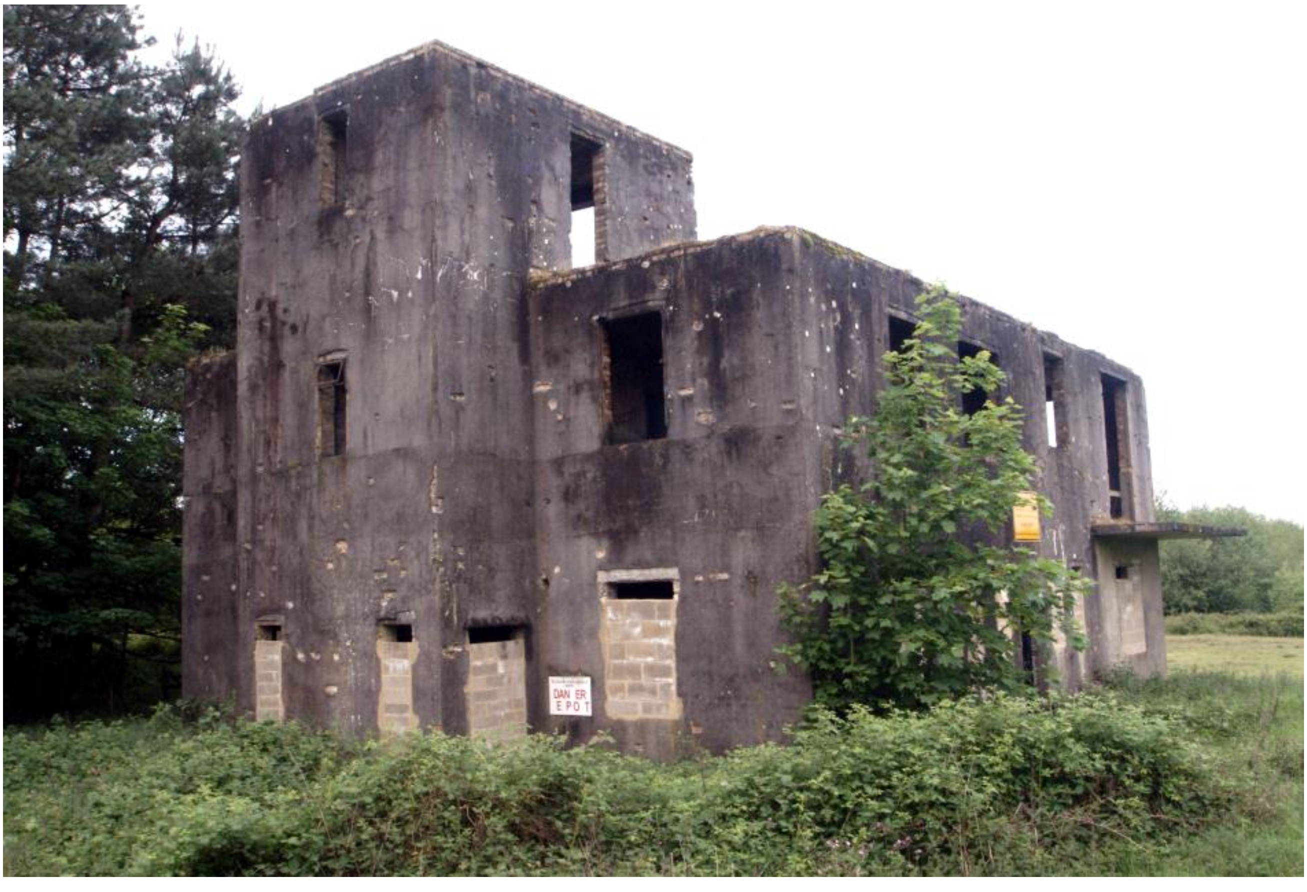


Plate 64: Ibsley watch office with meteorological section 518/40 rear and side elevation (07-09-10)

(C) Floor and Roof

Both floor and roof appear to be a combination of Smith's patent hollow concrete tiles with longitudinal and traversing reinforcement rods and another unknown type.

The Smiths flooring was installed using temporary telescopic cantering beams instead of formwork underneath, while the mortar between the units hardened. This allowed freedom of movement for workers underneath to carry out their tasks while the floor was being laid.

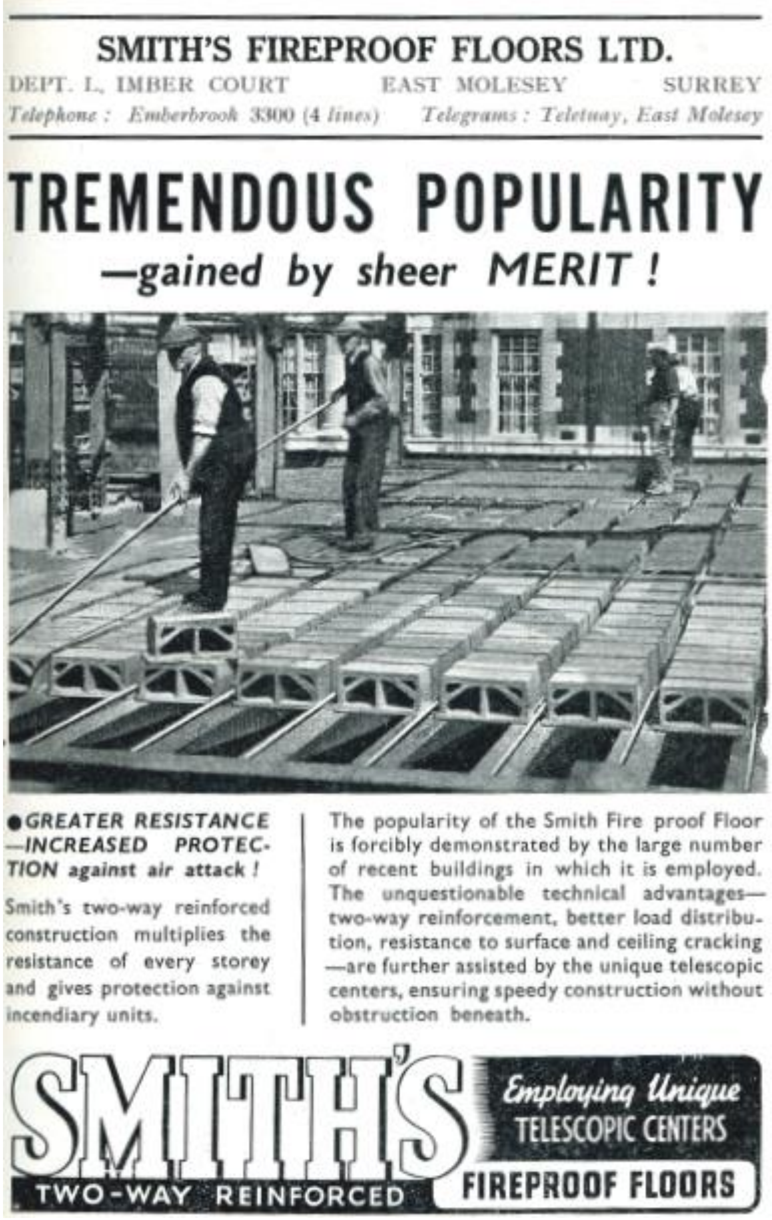


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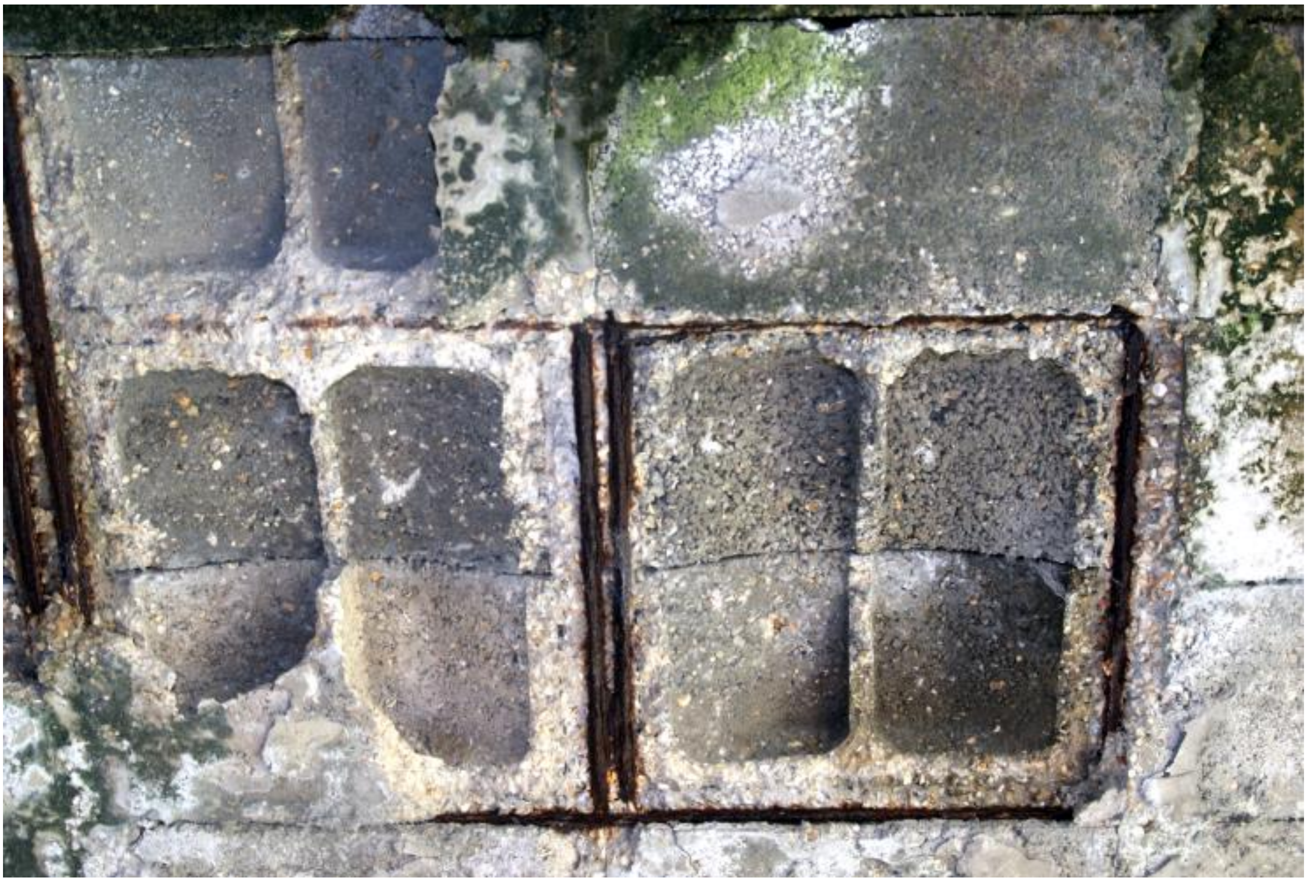
Plate 65: advert from the Concrete Year Book 1939



Plates 66 & 67: Smiths floor above and unknown type below (06-05-11)

## (D) Ground Floor

The ground floor room layout is near identical to the 518/40 drawing, except for new half-brick partitions that have been erected inside the watch office to create three rooms and a 2 ft 9 in wide passageway. The 'new' walls utilize the brick piers on the front elevation to create a pair of walls, giving the room 9 ft wide 12 ft 6 in long.

Outside at ground floor level, there is evidence towards the rear of the building of a concrete plinth and cast gutter arrangement running along the stairwell annexe.

The main difference between Ibsley and other buildings is the presence of two brick piers against the rear wall in the watch office which carry RSJs that support the floor above. These are mirrored by the RSJs in the control room, but the ground floor RSJs are not necessary in buildings having timber floors. At Shipdham and Wymeswold the other RSJs (as shown on drawing 518/40) are not present in either building, they have instead either cased steel or reinforced concrete beams, whereas Ibsley has all RSJs which is similar to the drawing.

All window openings are similar to the original drawing. Door openings are nominally 2 ft 10 in wide by 6 ft 9 in high. Ceiling heights are nominally 10 ft high. All room sizes are nominally correct to drawing 518/40; the only differences are minor consisting of plus or minus one inch. One of the walls in the forecast room has been partially removed.

The positions of the pair of 2 ft 8 in window openings on the stairwell annexe are further outboard of those shown on drawing 518/40, this is to take account of the increased thickness of the brick and concrete stairs as opposed to a timber one.

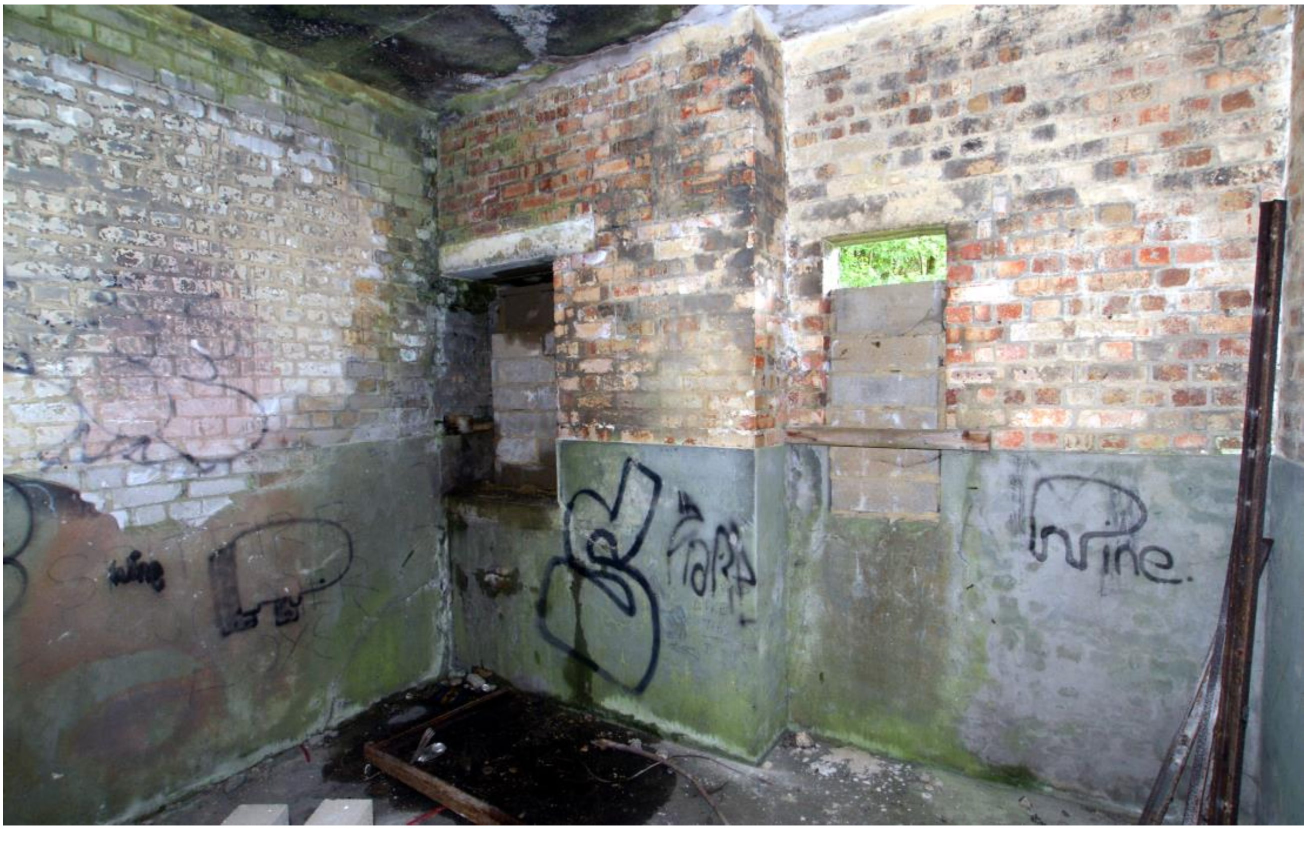


Plate 68: Ibsley – watch office view showing the pyrotechnic store in the corner with missing steel door (06-05-11)

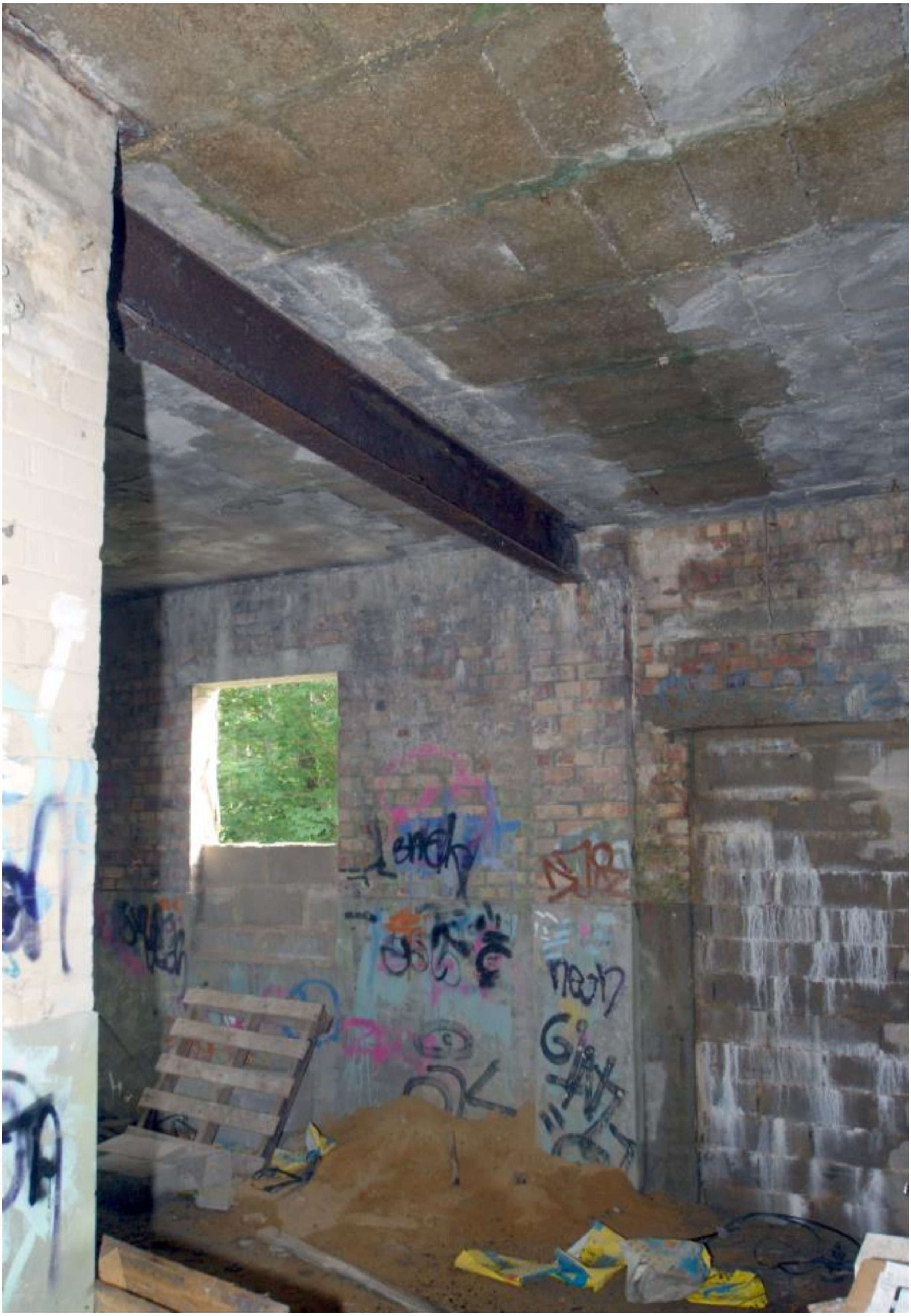


Plate 69: Ibsley forecast room – showing brick pier and RSJ supporting a Smith's patent floor (06-05-11)

### (E) First Floor

The first floor room layout is near identical to the 518/40 drawing, the chief difference is the window arrangement on the north east elevation where three windows are in slightly different positions and a window that should be on the north east elevation of the stairwell has been positioned instead on the south-east elevation.

It appears that the three pairs of W/T isolators (12995/39) that are a feature of the signals office of all types of watch office with met section have been omitted from the Ibsley building. This is similar to Wymswold although Shipdham has all three present.

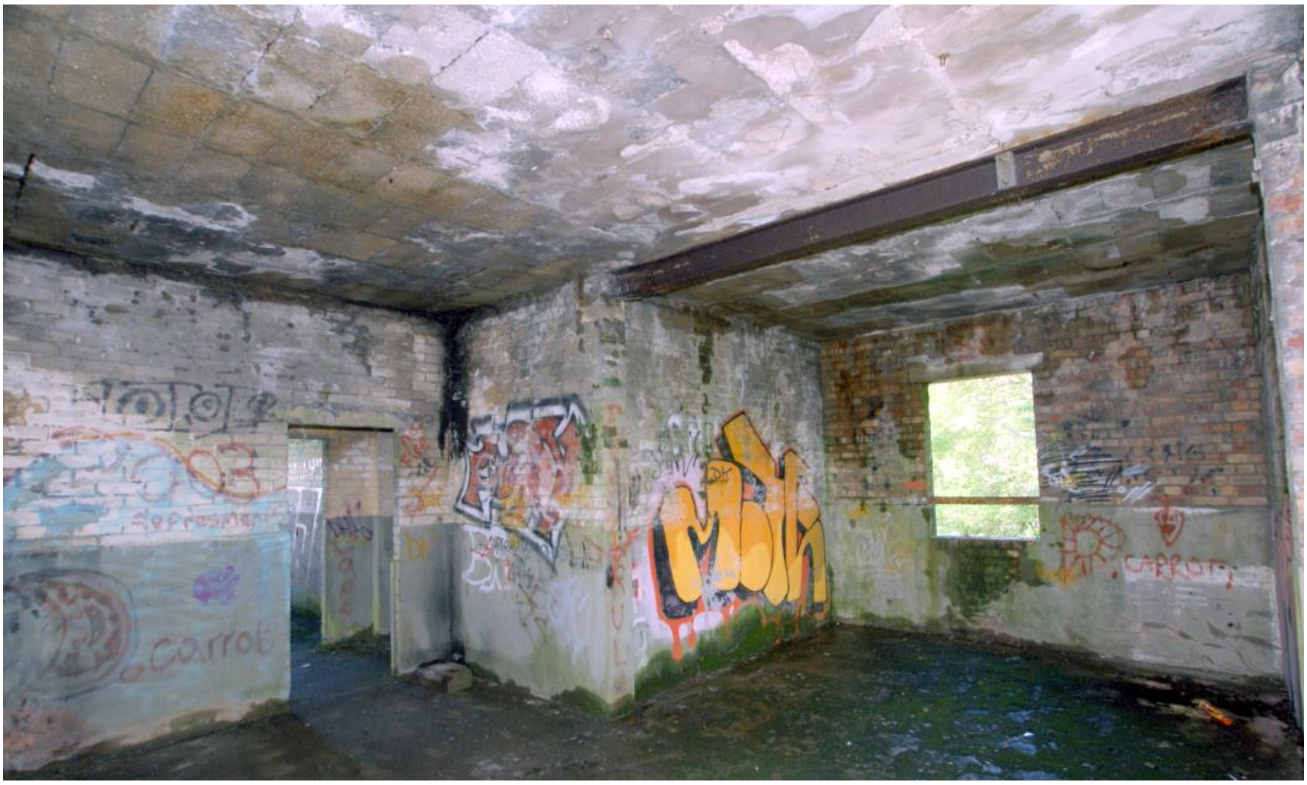
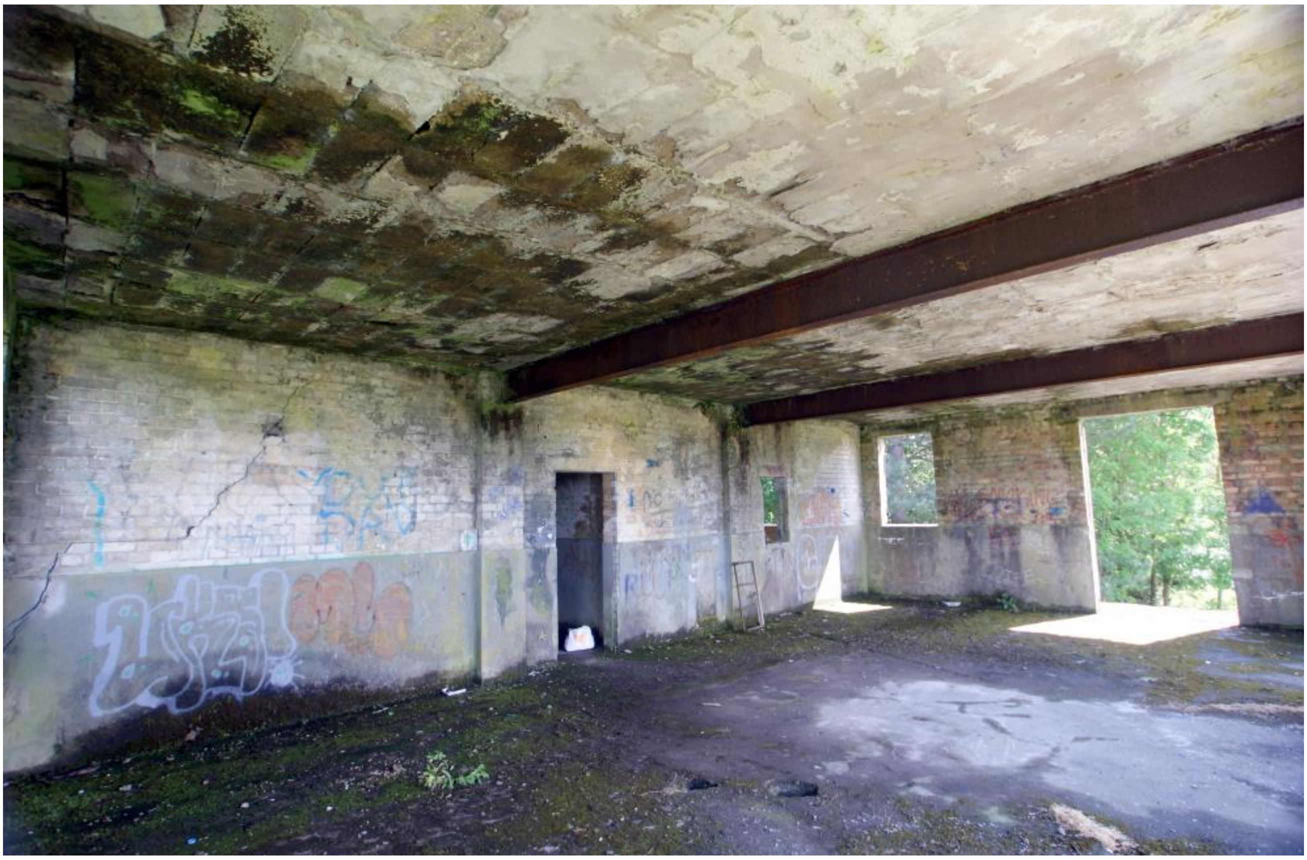
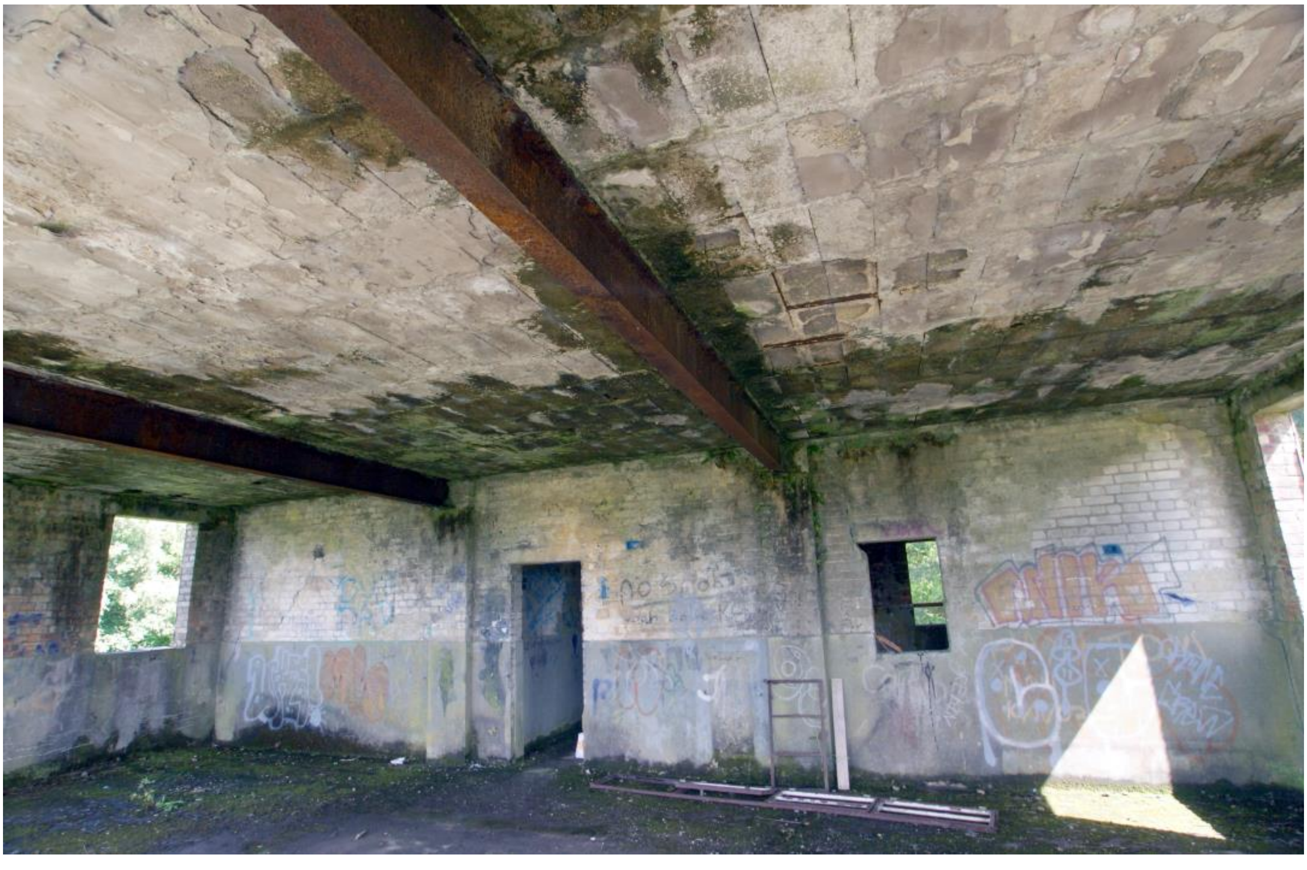


Plate 70: Ibsley signals office. Note the RSJ and Smith's patent floor above (06-05-11).



Plates 71 & 72: Ibsley control room note the damp ceiling and rusty RSJs (06-05-11)



Note that the damp pattern follows the line RSJs and the line of the supporting rear wall. Compare this with Plate 76.

### (F) Stairwell and Roof

At Shipdham and Wymeswold there are (or were) steel railings inside the stairwell annexe landing at roof level, but at Ibsley there is a cement rendered half brick banister wall instead.

The stairwell annexe where it projects above the roof line has acquired a 1 ft 9 in four-pane window casement on the south-east elevation instead of the south west elevation sand this is the only difference between Ibsley and the other buildings at Shipdham and Wymeswold but is similar to Rednal.

There are no railings present around the perimeter of the roof and the asphalt surface is missing, consequently the surface is in poor condition and not weather proof.

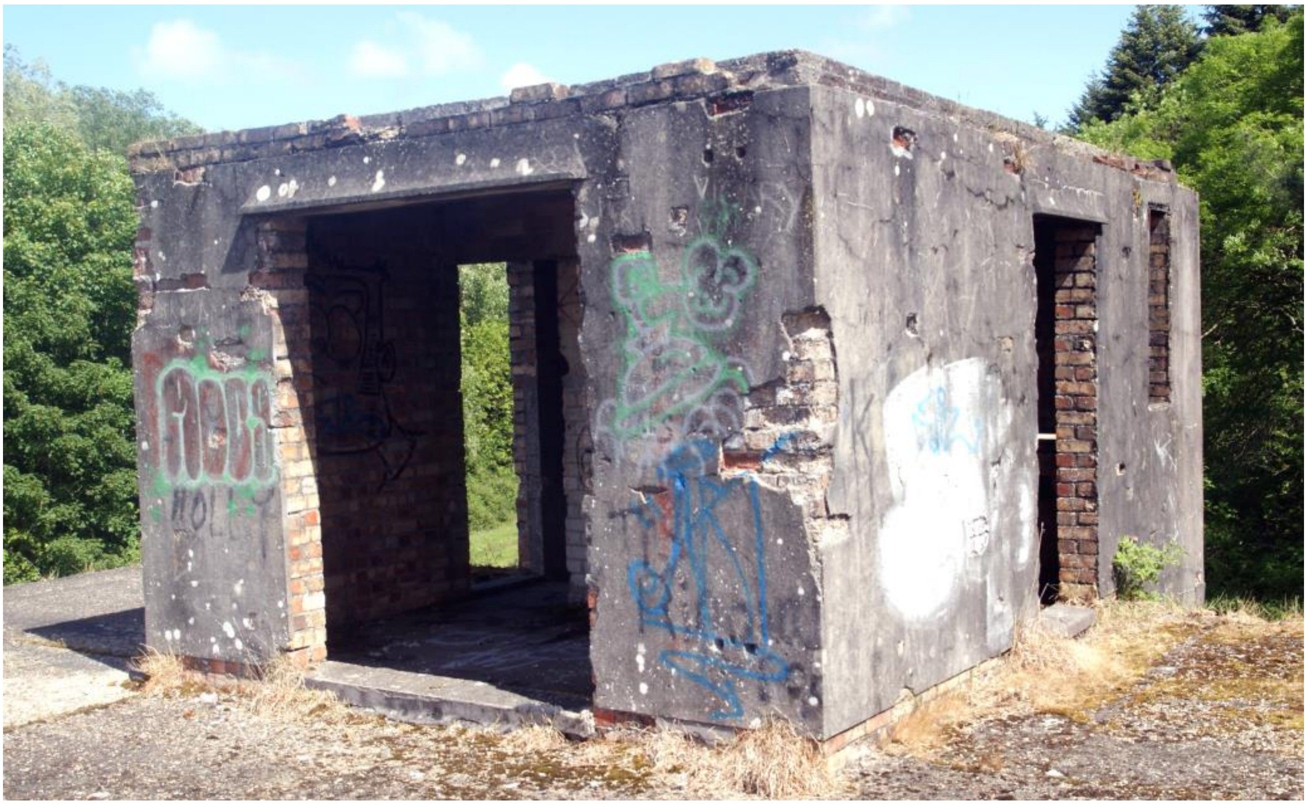


Plate 73 Ibsley the stairwell house annexe (06-05-11)

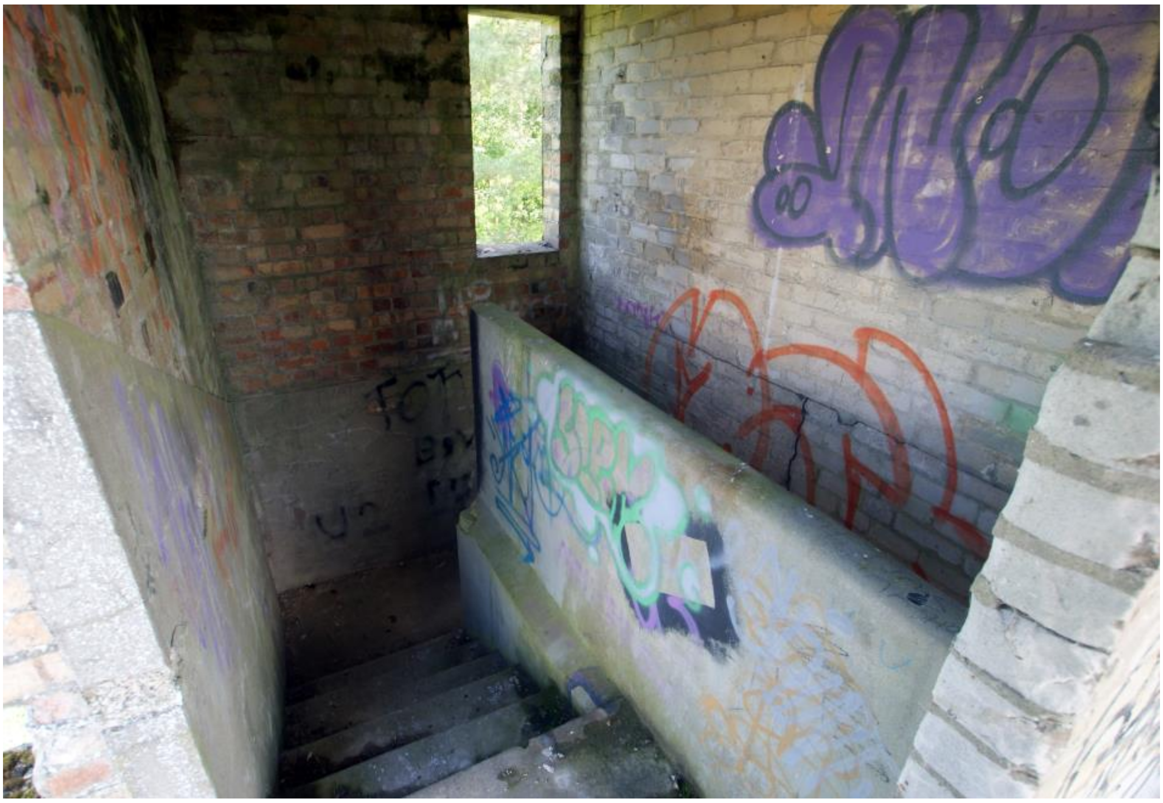


Plate 74: Ibsley - stairwell annexe landing (06-05-11)

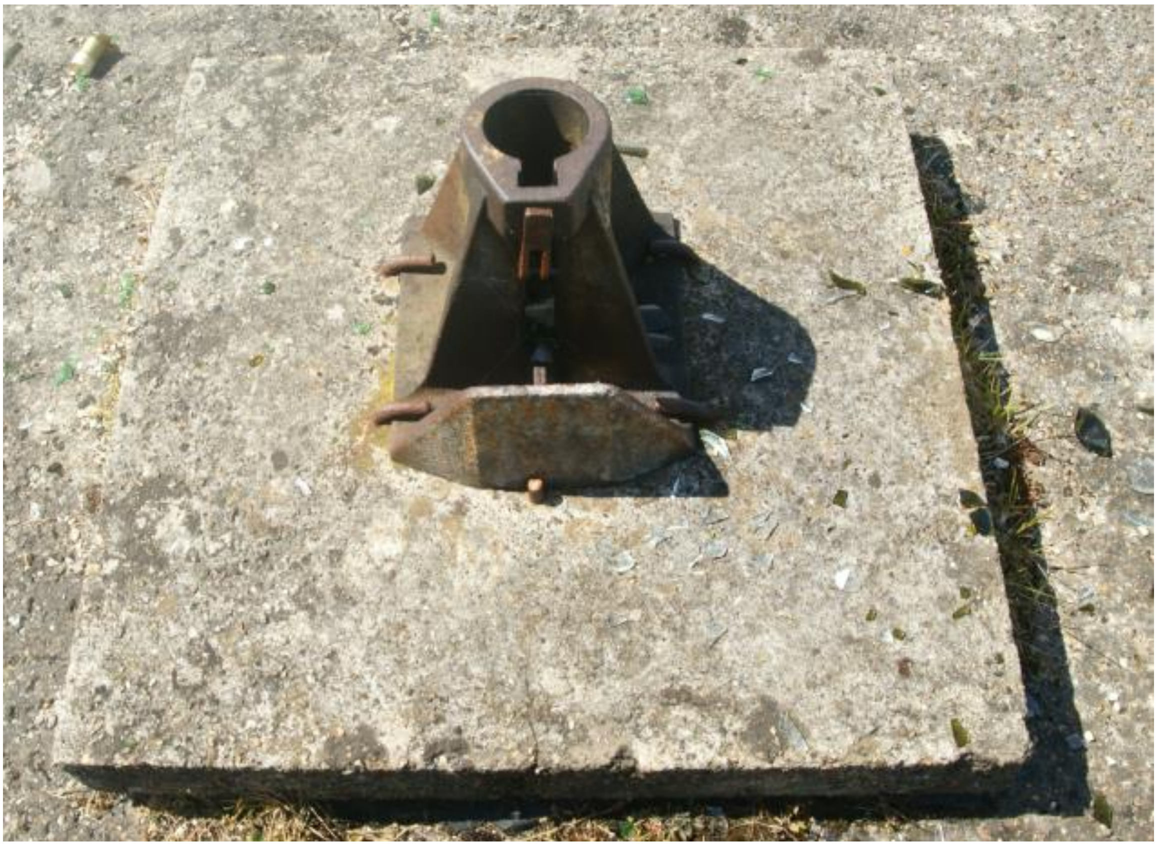
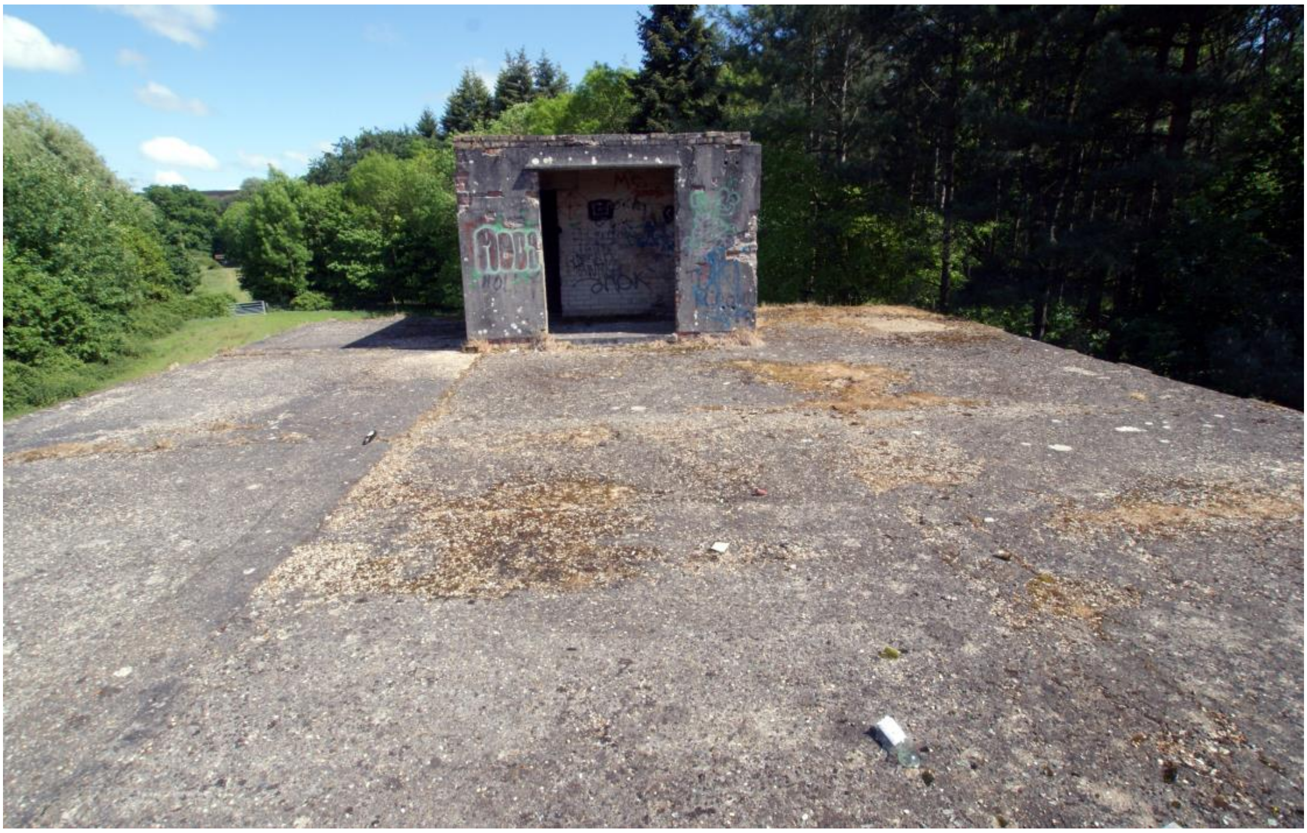


Plate 75: Ibsley - this appears to be a ground to ground signalling fitting and foundation block that has been placed onto the roof (06-05-11)



Plates 76 & 77: Ibsley - two views of the roof. Note the parallel lines showing up in the concrete. This is the positions of the structural supports for the roof, either brick walls or RSJs (06-05-11)

## Appendix 1: Summary of Permanent Watch Office with Meteorological Section Buildings

| ***Station*** | *Drawing #* | *Status* | *Station* | *Drawing #* | *Status* |
|---|---|---|---|---|---|
| **Abingdon** | 5845/39 | Extant | Binbrook | 2328/39 & 5871c/55 | Demolished |
| **Bramcote** | 2328/39 | Extant | Colerne | 5845/39 | Demolished |
| **Coltishall** | 2328/39 & 8786/39 | Extant | Coningsby | 5845/39 & 5871c/55 | Demolished |
| **Horsham St Faith** | 2328/39 | Extant | Kirton-in-Lindsey | 2328/39 | Extant |
| **Leuchars** | 2329/39 | Extant | Leeming | 2328/39 & 5871c/55 | Extant |
| **Lindholme** | 2329/39 | Extant | Linton-on-Ouse | 2328/39 & 5871c/55 | Extant |
| **Middleton St George** | 5845/39 & 5871c/55 | Extant | Middle Wallop | 2328/39 & 5871c/55 | Extant |
| **Mildenhall** | 5845/39 | Demolished | Newton | 2328/39 | Extant |
| **North Luffenham** | 5845/39 & 5871c/55 | Extant | Oakington | 5845/39 & 5871c/55 | Demolished |
| **Ouston** | 5845/39 | Extant | St Eval | 2423/39 | Demolished |
| **Swanton Morley** | 5845/39 | Extant | Swinderby | 5845/39 | Demolished |
| **Topcliffe** | 2328/39 | Extant | Syerston | 5845/39 | Extant |
| **Waddington** | 2328/39 | Extant | Waterbeach | 2328/39 | Extant |
| **West Malling** | 5845/39 | Extant | Wick | 2423/39 | Extant |
| **Wyton** | 2328/39 | Extant | *Listed building | | |
| Note: out of 29 buildings constructed, seven are demolished | | | | | |

Appendix 2: Summary of Temporary Watch Office with Meteorological Section Buildings

| *Station* | *Drawing #* | *Status* | *Station* | *Drawing #* | *Status* |
|---|---|---|---|---|---|
| **Andreas** | 518/40 & 10413/42 | Extant | Atcham | 518/40 | Demolished |
| **Ayr** | 518/40 & 16406/40 | Demolished | Ballyhalbert | 518/40 & 8936/40 | Extant |
| **Barrow** | 518/40 & WH53/42 | Extant | Bottesford | 518/40 | Extant |
| **Bovingdon** | 518/40 & 8936/40 | Demolished | Carlisle | 518/40 | Extant |
| **Charterhall** | 518/40 | Demolished | Chelveston | 518/40 | Demolished |
| **Chipping Warden** | 518/40 | Demolished | Eglington | 518/40 & 8936/40 | Extant |
| **Elsham Wolds** | 518/40 | Demolished | Enniskillen | 518/40 | Unknown |
| **Fairwood Common** | 518/40 & FCW4952 | Extant | Foulsham | 519/40 & 5217/41 | Demolished |
| **Goxhill** | 518/40 & 8936/40 | Demolished | Hardwick | 518/40 & 5966/43 | Demolished |
| **Harrowbeer** | 518/40 | Demolished | Harwarden | 518/40 & 8936/40 | Extant |
| **High Ercall** | 518/40 & 8936/40 | Demolished | Holme-on-Spalding Moor | 518/40 | Demolished |
| **Honeybourne** | 518/40 & 8936/40 | Extant | Honiley | 518/40 | Demolished |
| **Hurn** | 518/40 | Extant | Ibsley | 518/40 & 8936/40 | Extant |
| **Lichfield** | 518/40 | Demolished | Limavady | 518/40 | Extant |
| **Llandow** | 518/40 | Extant | Long Kesh | 518/40 & 16406/40 | Demolished |
| **Marston Moor** | 518/40 | Extant | Milfield | 518/40 & 8936/40 | Demolished |
| **Molesworth** | 518/40 | Demolished | Moreton-in-Marsh | 518/40 & 8936/40 | Demolished |
| **Pershore** | 518/40, 8936/40 & 5871c/55 | Extant | Peterhead | 518/40 & WA15/782/41 | Demolished |
| **Polebrook** | 518/40 & 3446/42 | Demolished | Portreath | 518/40 | Demolished |
| **Rednal** | 518/40 & 8936/40 | Extant | Riccal | 518/40 & 8936/40 | Demolished |
| **Shipdam** | 518/40 & 8936/40 | Extant | Shobden | 518/40 | Demolished |
| **Silloth** | 518/40 & 8936/40 | Extant | Skaebrae | 518/40 & 8936/40 | Demolished |
| **Snaith** | 518/40 & 8936/40 | Demolished | Tain | 518/40 & 8936/40 | Extant |
| **Tealing** | 518/40 & 8936/40 | Extant | Tempsford | 518/40 & 3446/42 | Demolished |
| **Thurleigh** | 518/40 | Demolished | Upper Heyford | 518/40 | Demolished |
| **Wellesbourne Mountford** | 518/40 | Demolished | Westcott | 518/40 | Extant |
| **Wing** | 518/40 | Demolished | Wymeswold | 518/40 | Extant |

Notes: out of 54 buildings known to have been built 31 are demolished and the status of one is unknown. Out of those that survive 13 are extant in England, two are in Scotland, three are located in Wales, three are in Northern Ireland and one is in the Isle of Man.

## Appendix 3: New Non-Dispersed Operational & Bomber OTU Stations Planned in 1940 (Transition from Peacetime to War)

| *Aerodrome* | *Date Opened* | *Type* | *Group* | *Hangars 1944* |
|---|---|---|---|---|
| Chelveston | 16-09-41 | Bomber | No.2 & 8 | 1 J & 2 T2 |
| Chipping Warden | 01-08-41 | No.12 OTU | No.6 (91) | 1 J & 4 T2 |
| Elsham Wolds | 00-07-41 | Bomber | No.1 | 1 J & 2 T2 |
| Goxhill | 01-08-41 | Bomber / Fighter | No.1 | 1 J, 2 T2 & 4 Blisters |
| Holme-on-Spalding Moor | 24-07-41 | Bomber | No.1 | 1 J & 5 T2 |
| Honeybourne | 24-08-41 | FTU & 24 OTU | No.7 | 1 J & 4 T2 |
| Molesworth | 05-09-41 | Bomber | No.2 | 1 J & 2 T2 |
| Moreton-in-Marsh | 20-01-41 | No.21 OTU | No.91 | 1 J & 4 T2 |
| Pershore | 00-02-41 | No. 23 OTU | No. 44 | 1 J & 4 T2 |
| Pocklington | 15-06-41 | Bomber | No.4 | 1 J, 2 T2 & 1 B1 |
| Polebrook | 15-06-41 | Bomber | No.2 | 1 J & 2 T2 |
| Snaith | 30-05-41 | Bomber | No.1 | 1 J & 2 T2 |
| Wellesbourne Mountford | 15-04-41 | OTU | No.91 | 1 J & 4 T2 |

Note:

The above were the last aerodromes designed with a compact layout although some were caught in the transition from peacetime to war and had dispersed sites. This group is also the last with permanent hangars (type ‘J’ hangars), one of which was provided on each airfield. The ‘J’ was supplemented by the then new temporary hangar known as the T2. The operational bomber stations featured two T2s each while, bomber OTUs often had more. The T2 hangar was now firmly established as the RAF’s standard portable hangar.

Nearly all airfields were classified as Regional Control Stations having a temporary brick version of the watch office with meteorological section (518/40). The exception is Pocklington which is included here because of it ‘J’ hangar.

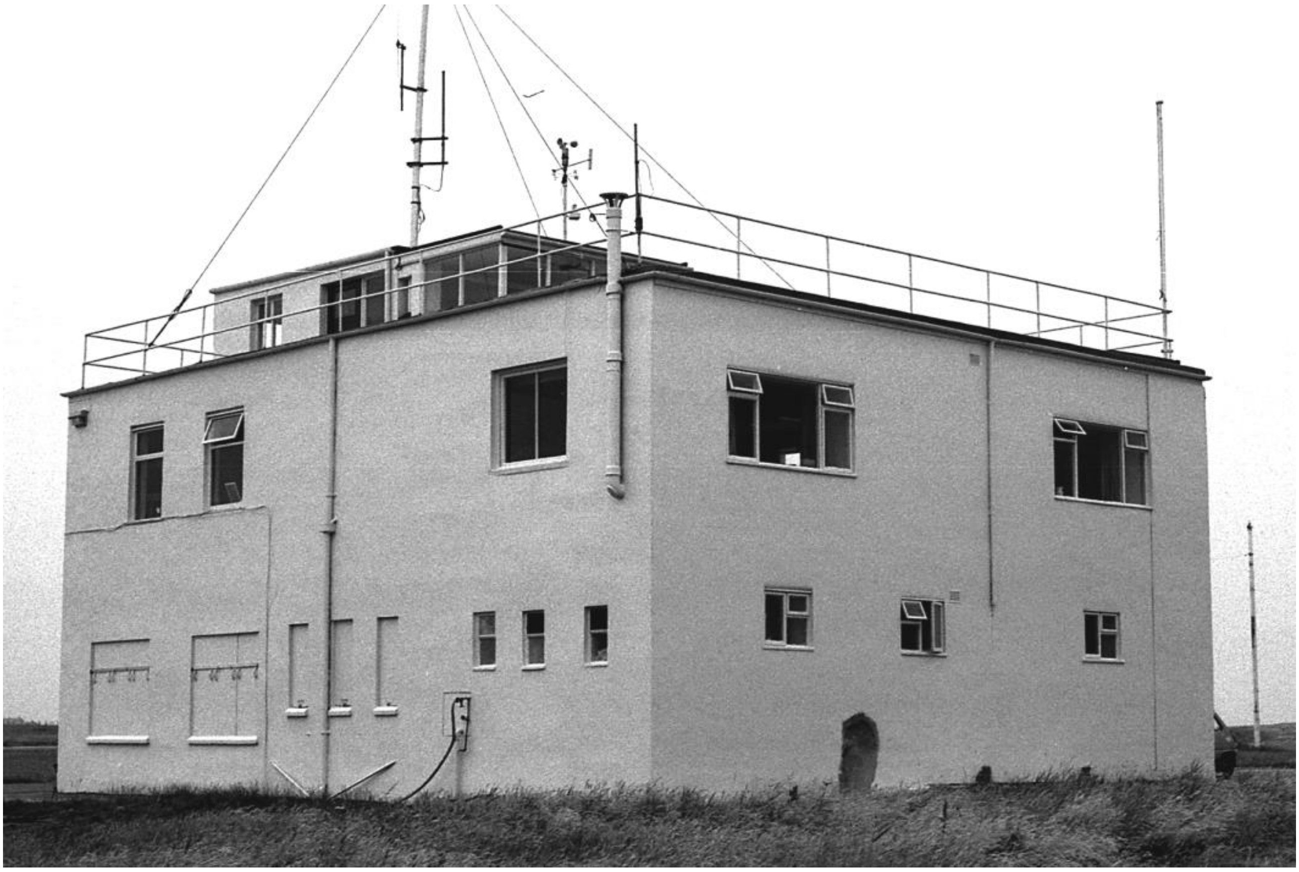
## Appendix 4: New Dispersed Operational & OTU Stations Planned in 1940 / 1941

| *Aerodrome* | *Date Opened* | *Type* | *Group* | *Hangars 1944* |
|---|---|---|---|---|
| Andreas | 20-08-41 | Fighter | No.9 | 3 Bellmans & 8 Blisters |
| Atcham | 20-08-41 | Fighter Sector | No.9 | 3 CH & 8 Blisters |
| Ayr | 07-04-41 | Fighter | No.13 | 4 Bellman & 17 Blisters |
| Ballyhalbert | 28-06-41 | Fighter | No.13 / 82 | 2 Bellman, 12 Blisters & 12 D FP B |
| Barrow | 17-10-41 | AGS | No. 23 | 3 CH & 9 Blisters |
| Bottesford | 00-11-41 | Bomber | No.5 | 9 T2 & 1B1 |
| Bovingdon | 15-06-42 | (B)OTU | No.92 | 4 T2 |
| Charterhall | 00-04-42 | 54 (F) OTU | No. 12 | 4 Bellman & 9 Blisters |
| Chivenor | | | No. 19 | 4 Bellman, 4 Hinaidi & 1 Blister |
| Crosby-on-Eden | 20-02-41 | 59 (F) OTU | No. 44 | 3 Bellman, 3 T2 & 5 Blisters |
| Eglington | 00-04-41 | Coastal/Fighter | No.15 | 12 Blisters |
| Fairwood Common | 15-06-41 | Fighter | No.10 | 3 Bellman & 8 Blisters |
| Foulsham | Unknown | Bomber | No. 100 | 9 T2 & 1 B1 |
| Hardwick | 10-06-42 | Bomber | No. 93 | 3 T2 |
| Harrowbeer | 00-02-41 | Fighter | No.10 | 3 Bellman & 9 Blisters |
| Honiley | 00-08-41 | Fighter Sector | No.9 | 4 Bellman, 8 Blisters & 12 DFPB |
| Hurn | 01-04-41 | Fighter | No.10 | 3 Bellman, 6 T2, 2 B1 & 9 Blisters |
| Ibsley | 00-02-41 | Fighter | No.10 | 2 Bellman & 12 Blisters |
| Limavady | 00-12-40 | Coastal | No.15 | 6 Bellman, 1T2 & 8 Blisters |
| Long Kesh | 00-11-41 | Bomber | RAF NI | 2 Bellman, 2 T2 & 5 Blisters |
| Marston Moor | 20-11-41 | Bomber | No.4 | 6 T2 & 1B1 |
| Milfield | 05-07-42 | 59 (F) OTU | No.81 | 2 T2 & 8 Blisters |
| Peterhead | 07-07-41 | Fighter | No.14 | 5 S & 8 Blisters |
| Portreath | 00-03-41 | Fighter Sector | No.10 | 1 T2, 12 Blisters & 9 DFP B |
| Rednal | 08-04-42 | 61 (F) OTU | No.81 | 3 Bellman & 8 Blisters |
| Riccal | 00-12-42 | Bomber | No.4 | 6 T2 & 1 B1 |
| Shipdam | 10-06-42 | Bomber | No.2 | 3 T2 |
| Shobdon | 28-05-42 | Training | No.70 | 6 T2 & 6 Blisters |
| Skaebrae | 01-10-40 | Fighter | No.14 | 2 S & 1 CH |
| Tain | 16-09-41 | Coastal | No.14 | 3 Bellman, 2 T2 & 8 Blisters |
| Tealing | 00-03-42 | 56 (F) OTU | No.81 | 3 T1 & 8 Blisters |
| Tempsford | 00-12-41 | 11 (B) OTU | No.92 | 6 T2 & 1 B1 |
| Thurleigh | 00-01-42 | 8th USAAF | | 4 T2 |
| Wescott | 00-09-42 | 11 (B) OTU | No.92 | 4 T2 & 1B1 |
| Wing | 27-12-41 | 26 (B) OTU | No.7 | 4 T2 & 1B1 |
| Wymswold | 16-05-42 | 28 (B) OTU | No.7 | 4 T2 & 1B1 |

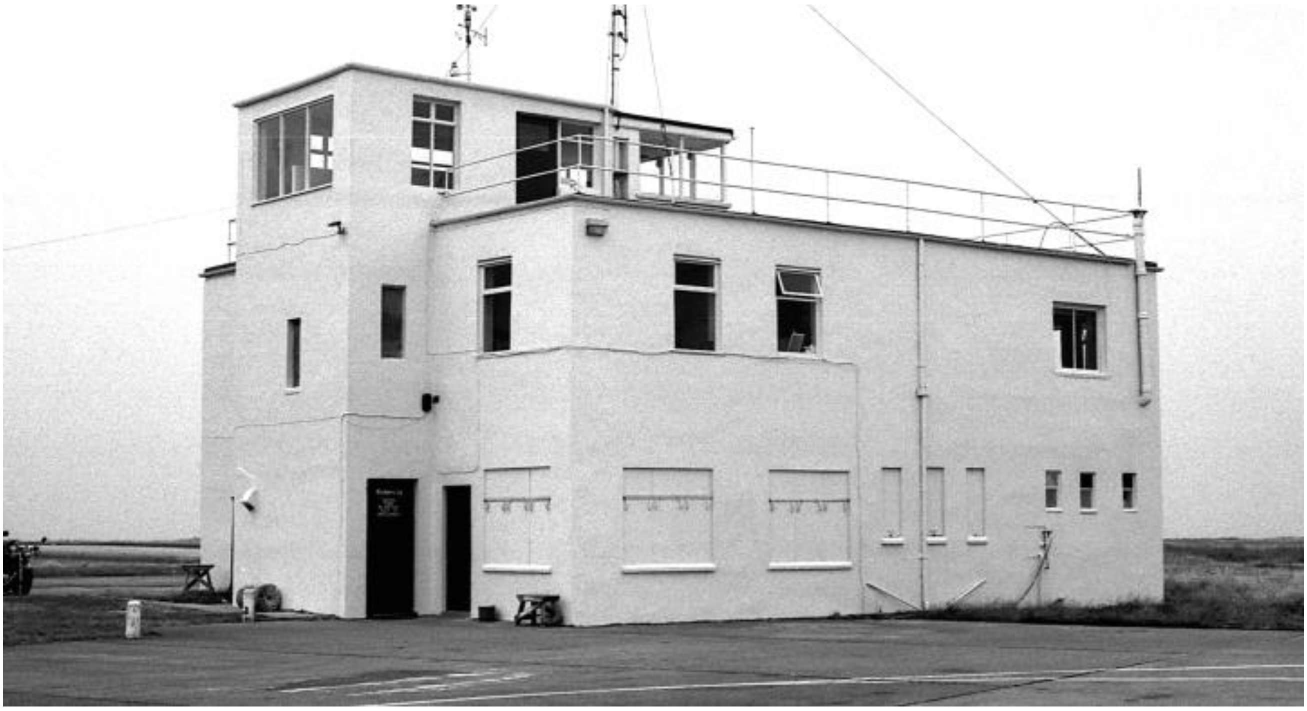
Note: all the above were classified as Regional Control Stations with the temporary brick watch office with meteorological section (518/40) and watch office without met section (Chivenor).

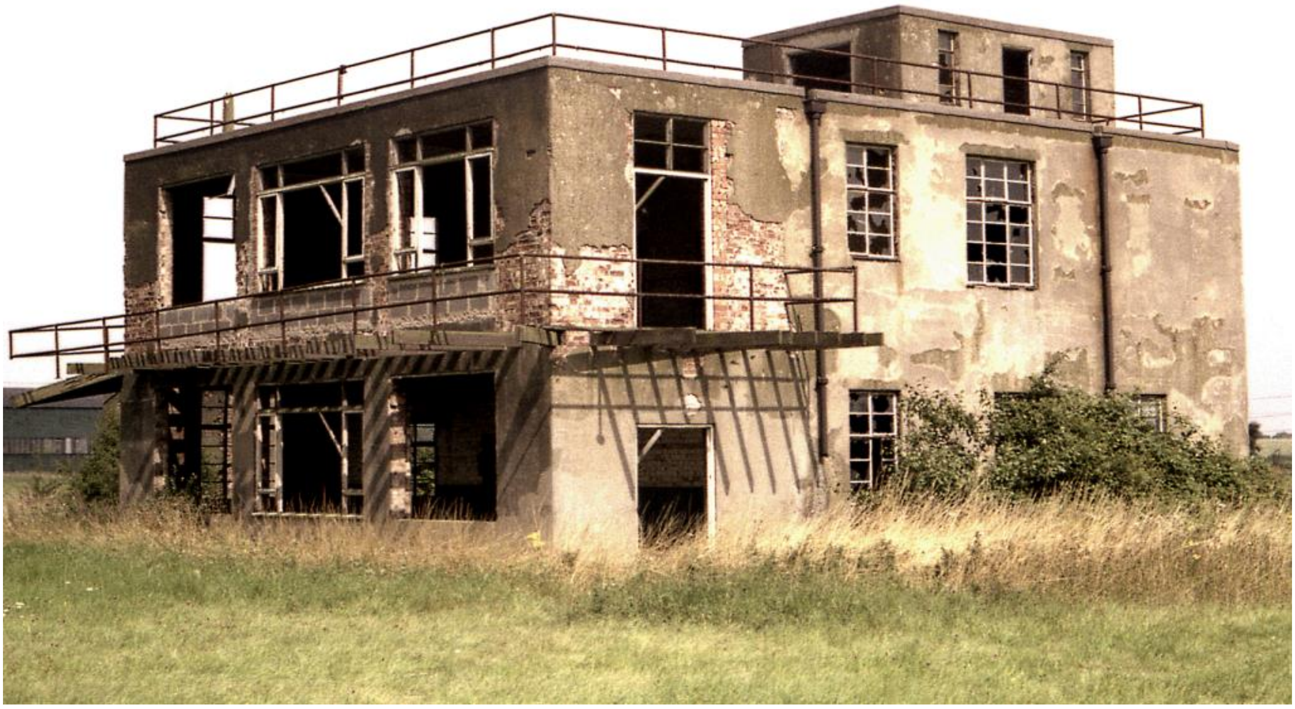
With the exception of Chivenor, the above were the first stations built under the dispersal system, all were built with transportable hangars such as the Bellman and T2. Source: Airfield Site Plans

## Appendix 5: Examples of Watch Office with Met Section 518/40 in England

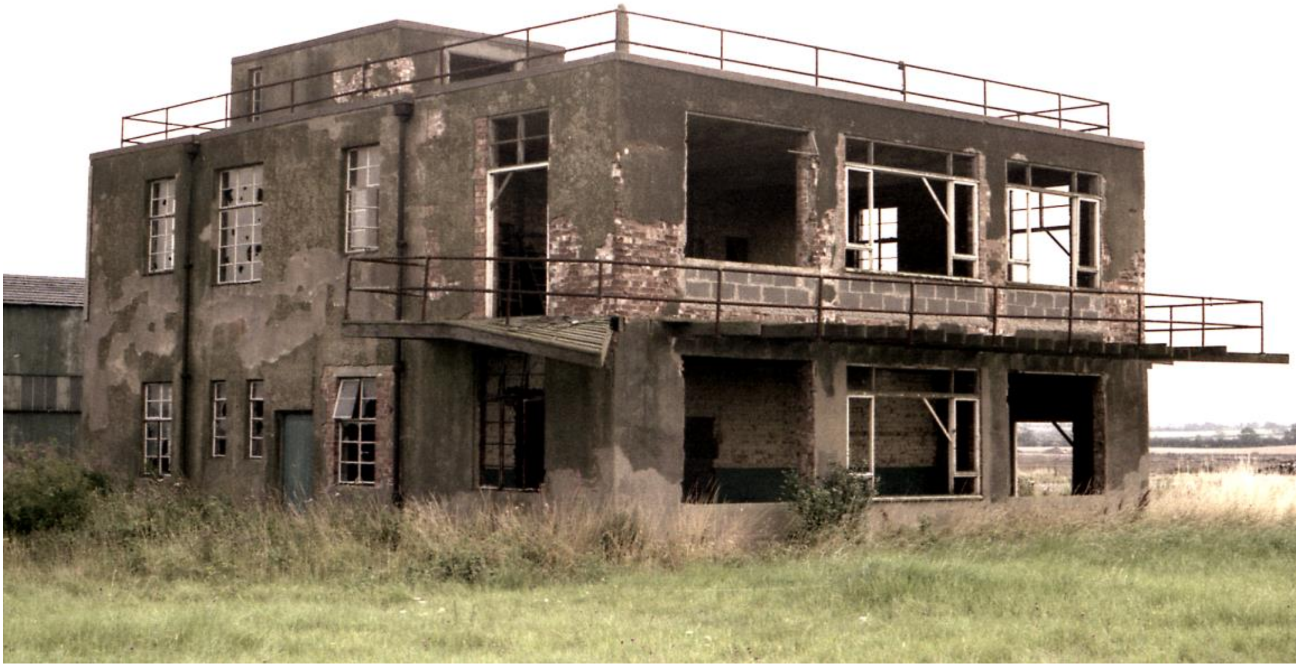


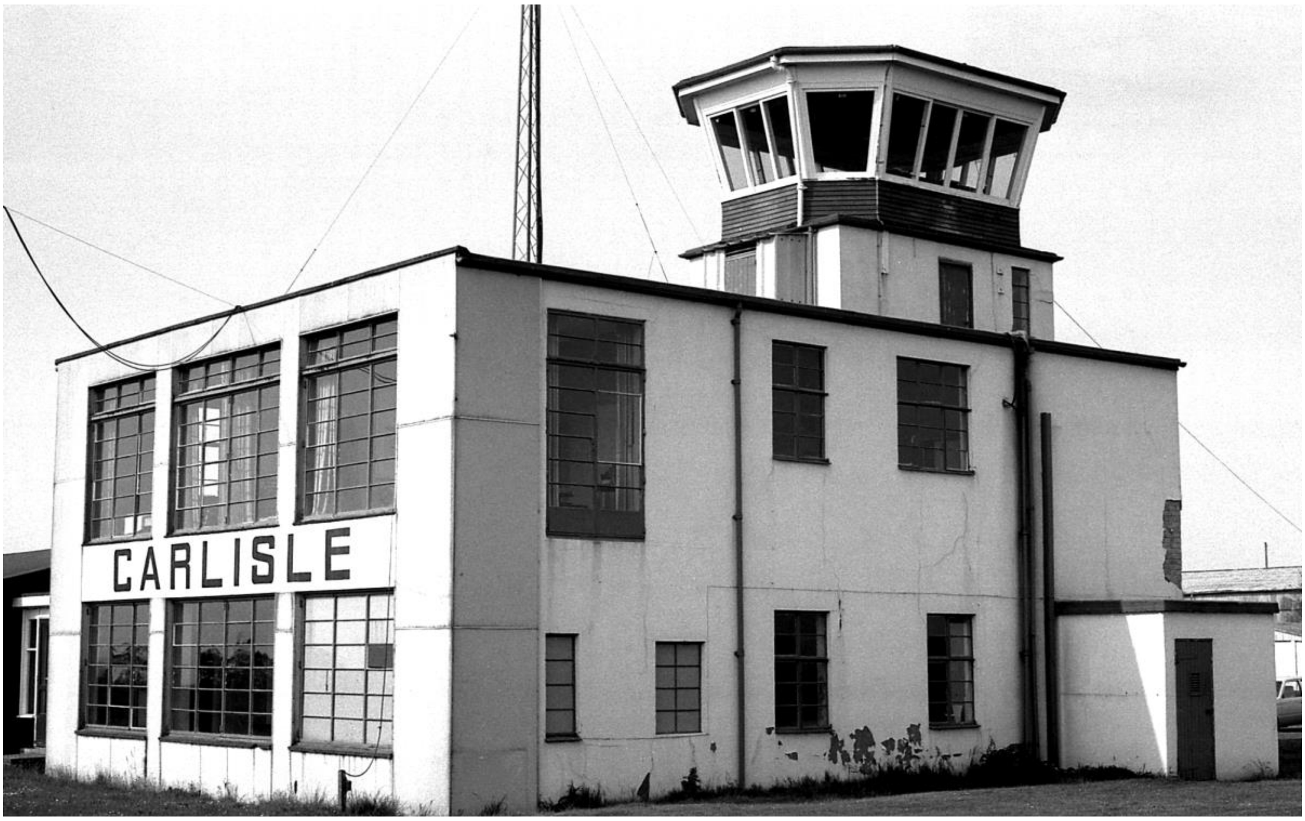
Plates 78 & 79: Barrow (17-07-82)



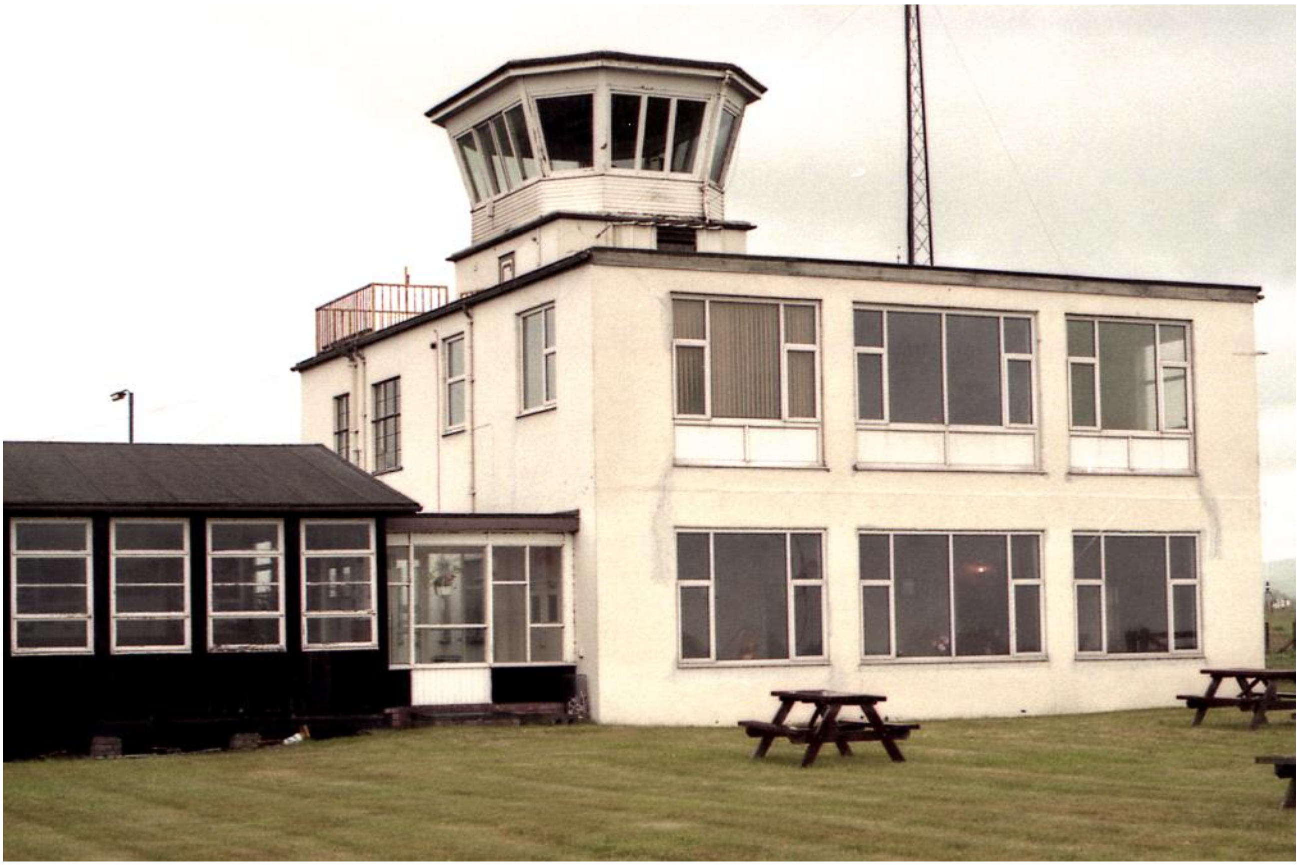


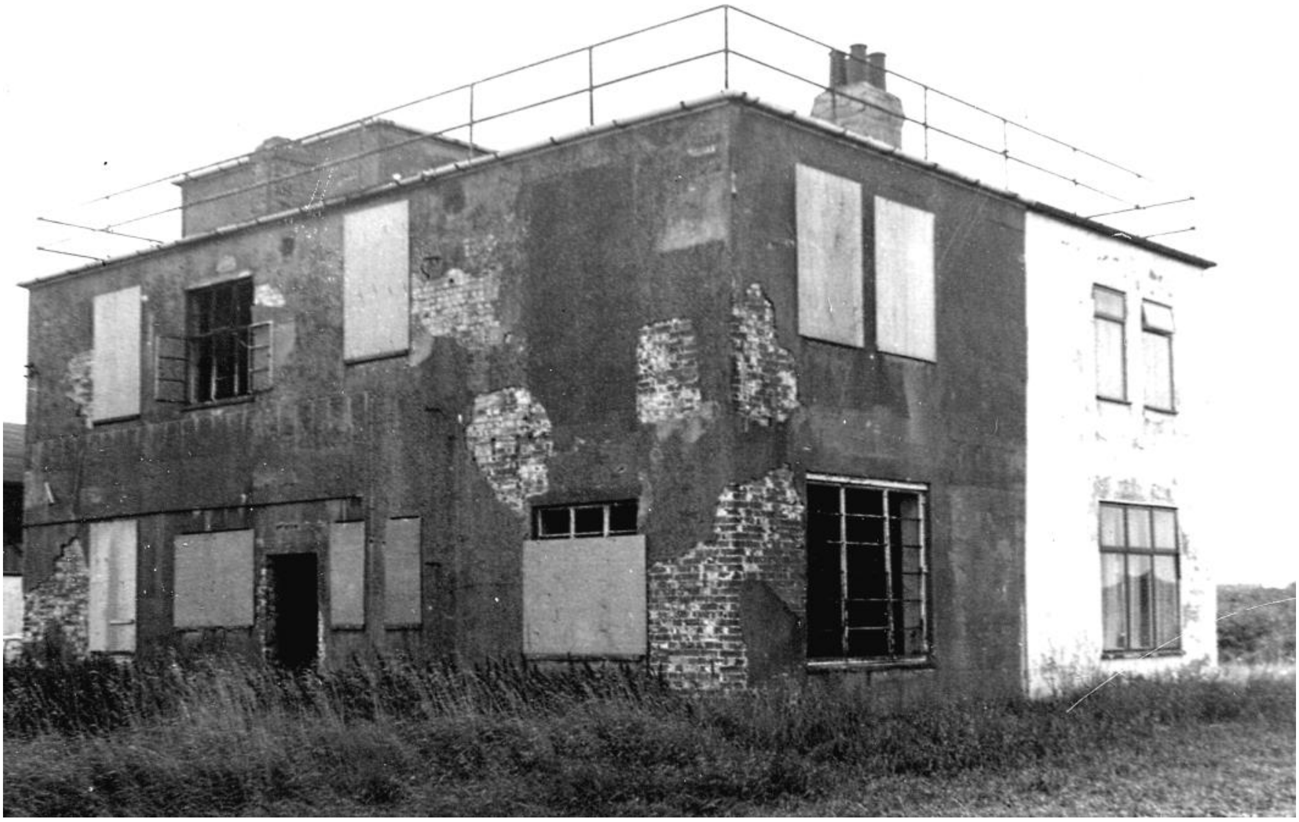
Plates 80 & 81: Bottesford (13-04-82) – building has since been converted into a dwelling



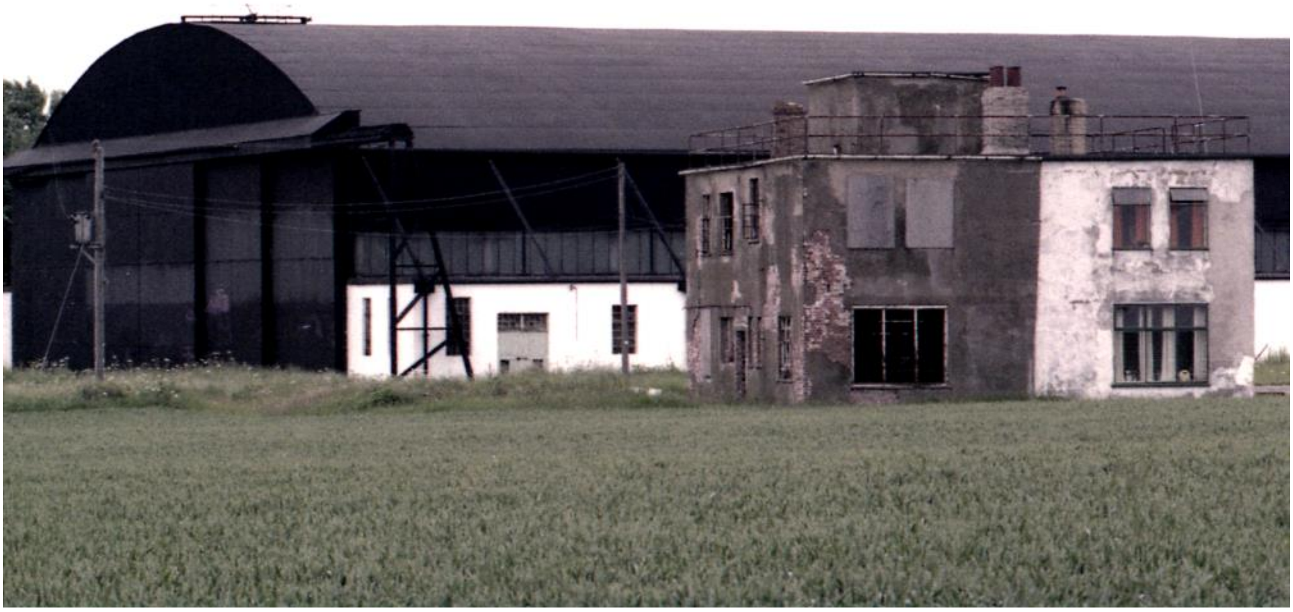


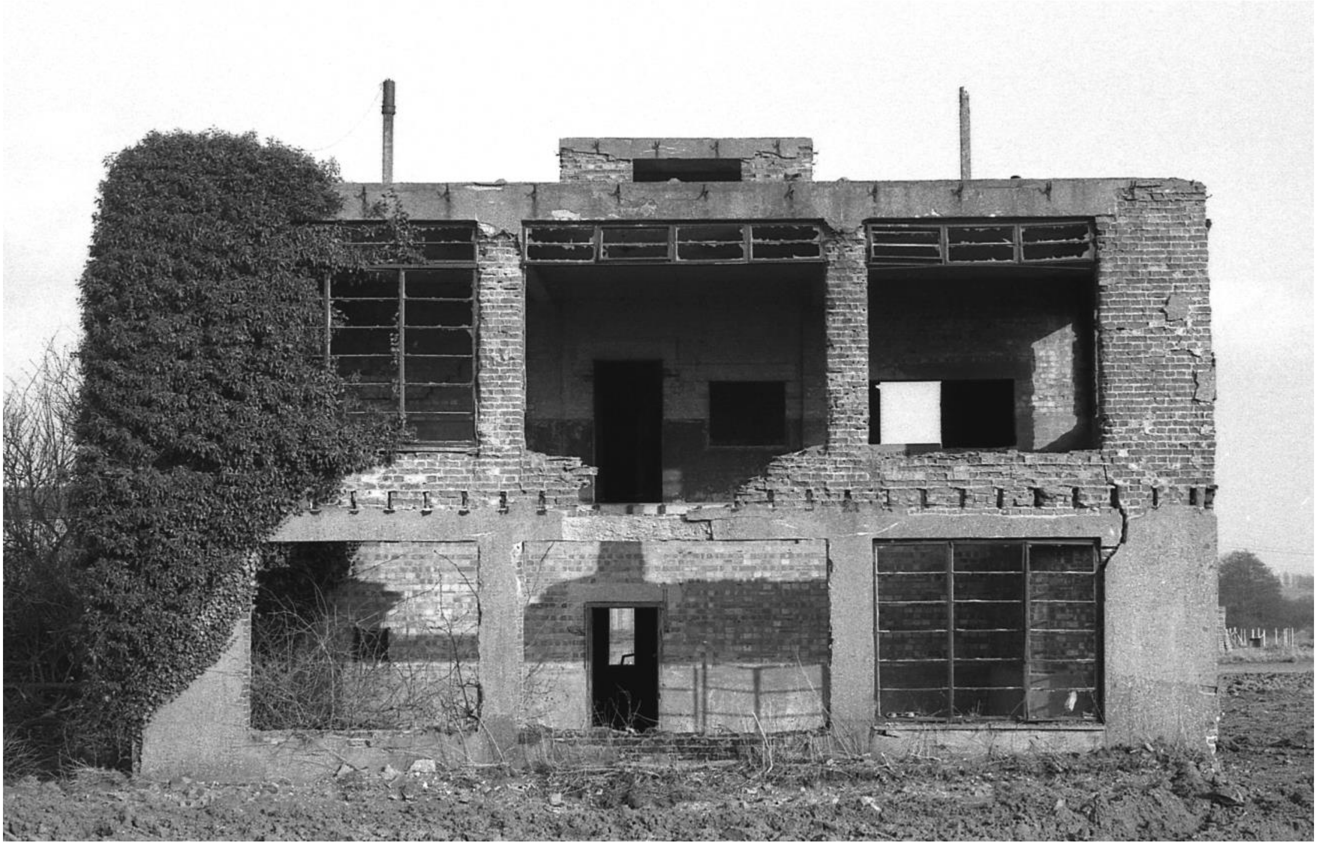
Plates 82 & 83: Crosby-on-Eden (30-05-82) above and (01-06-96)



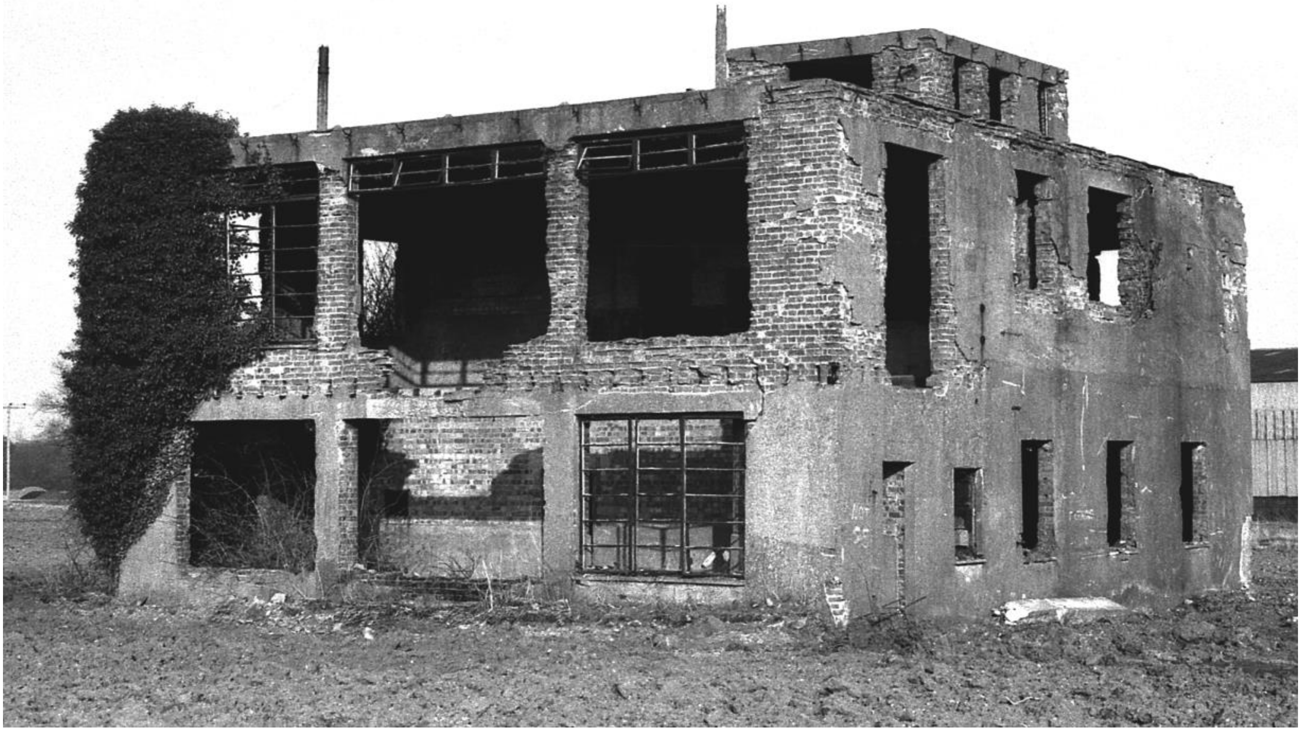


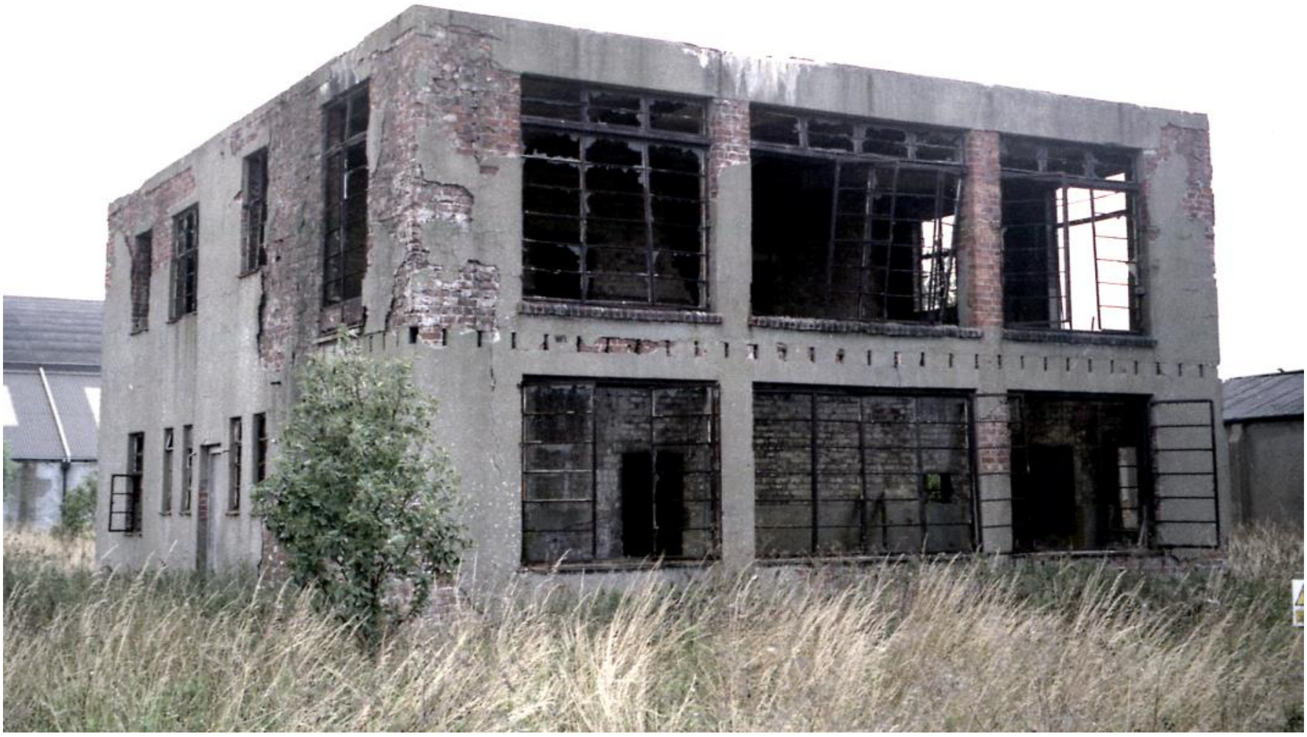
Plates 84 & 85 Elsham Wolds (1979) above and (15-06-82) – now demolished



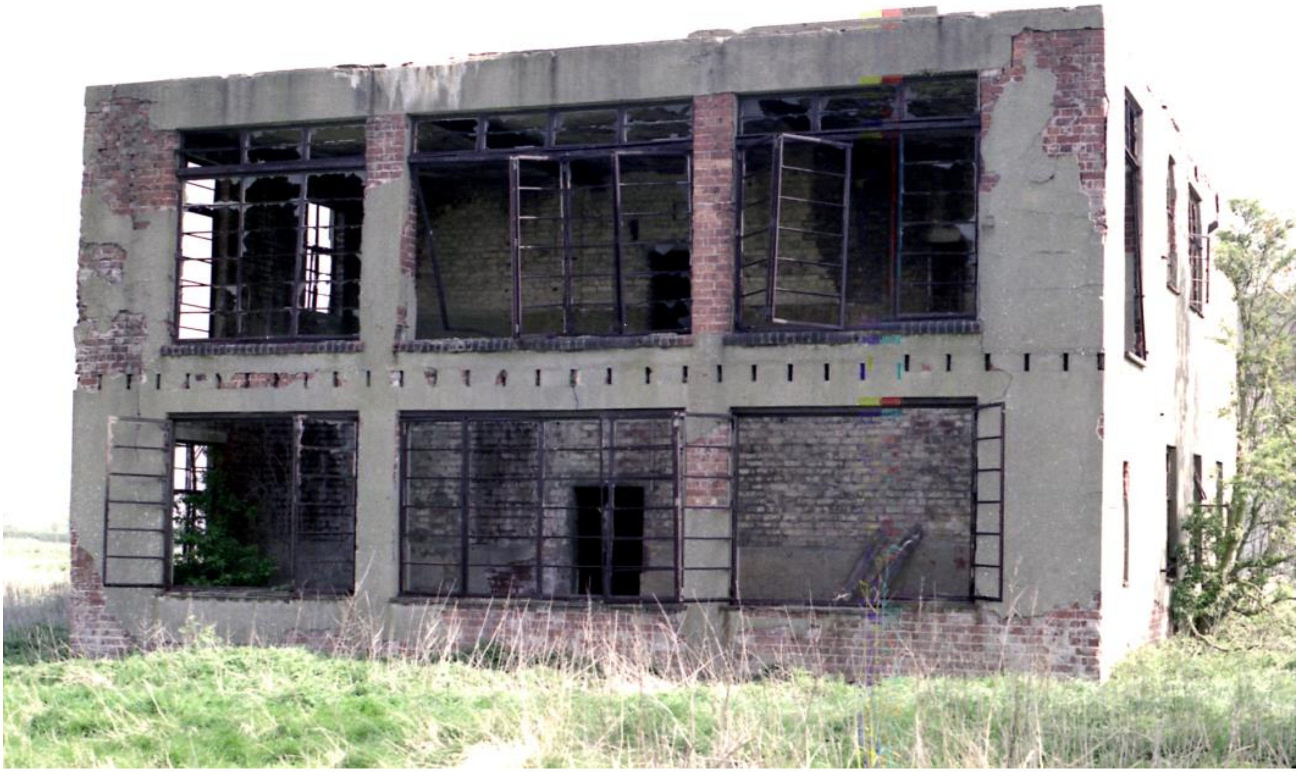


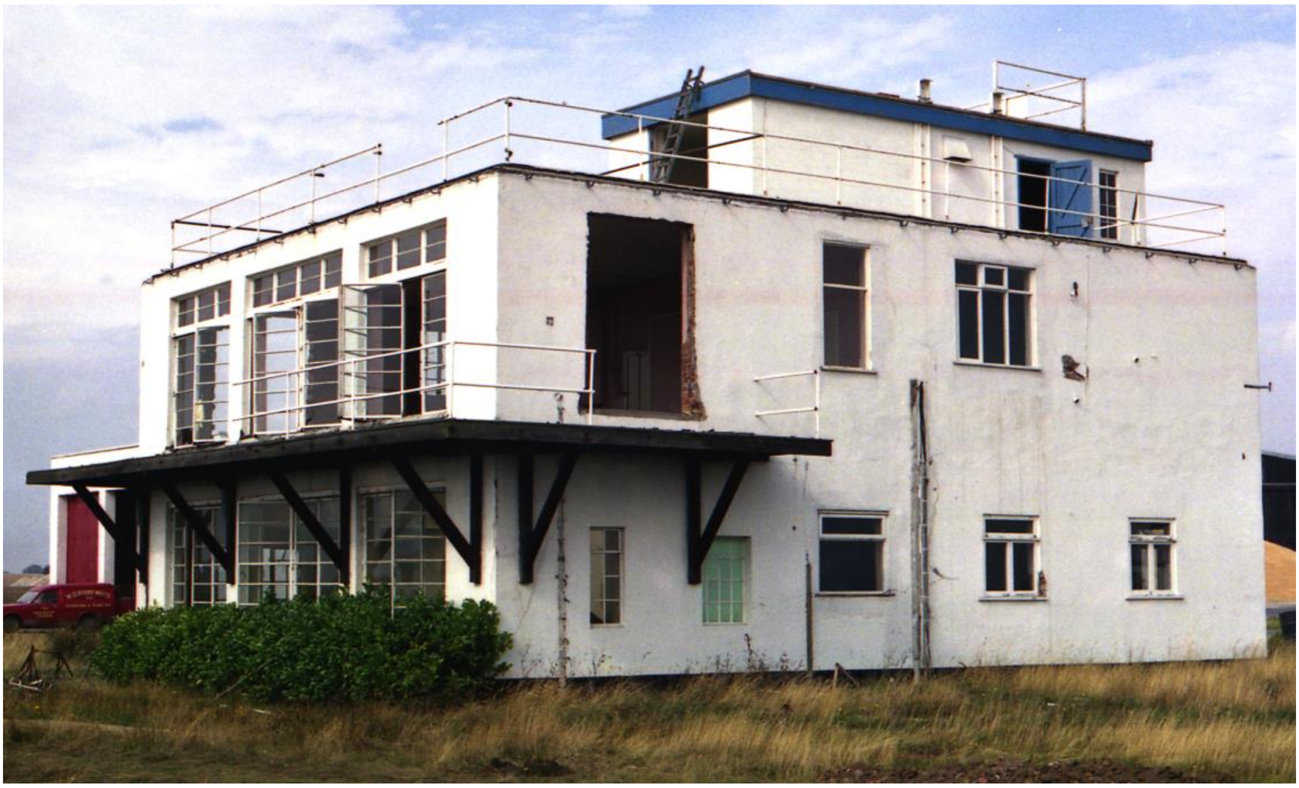
Plates 86 & 87: Foulsham (06-09-81) - demolished



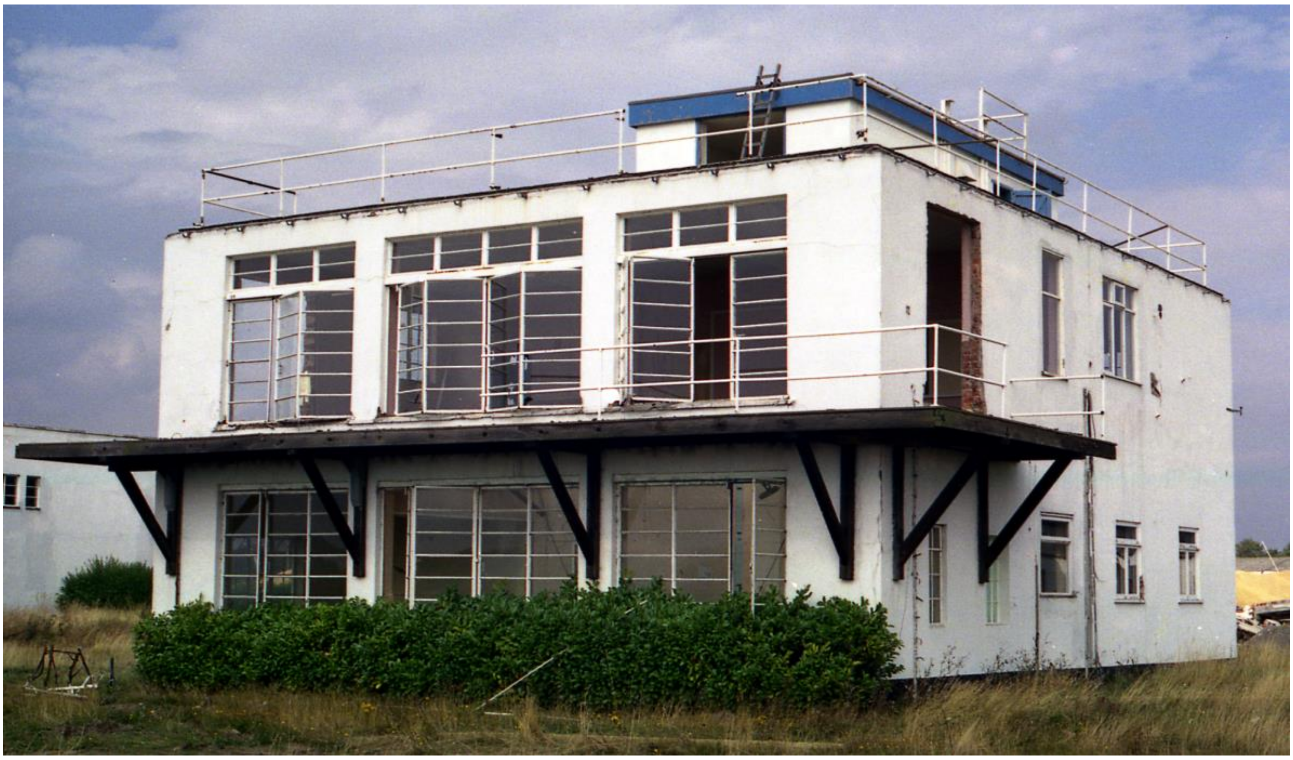


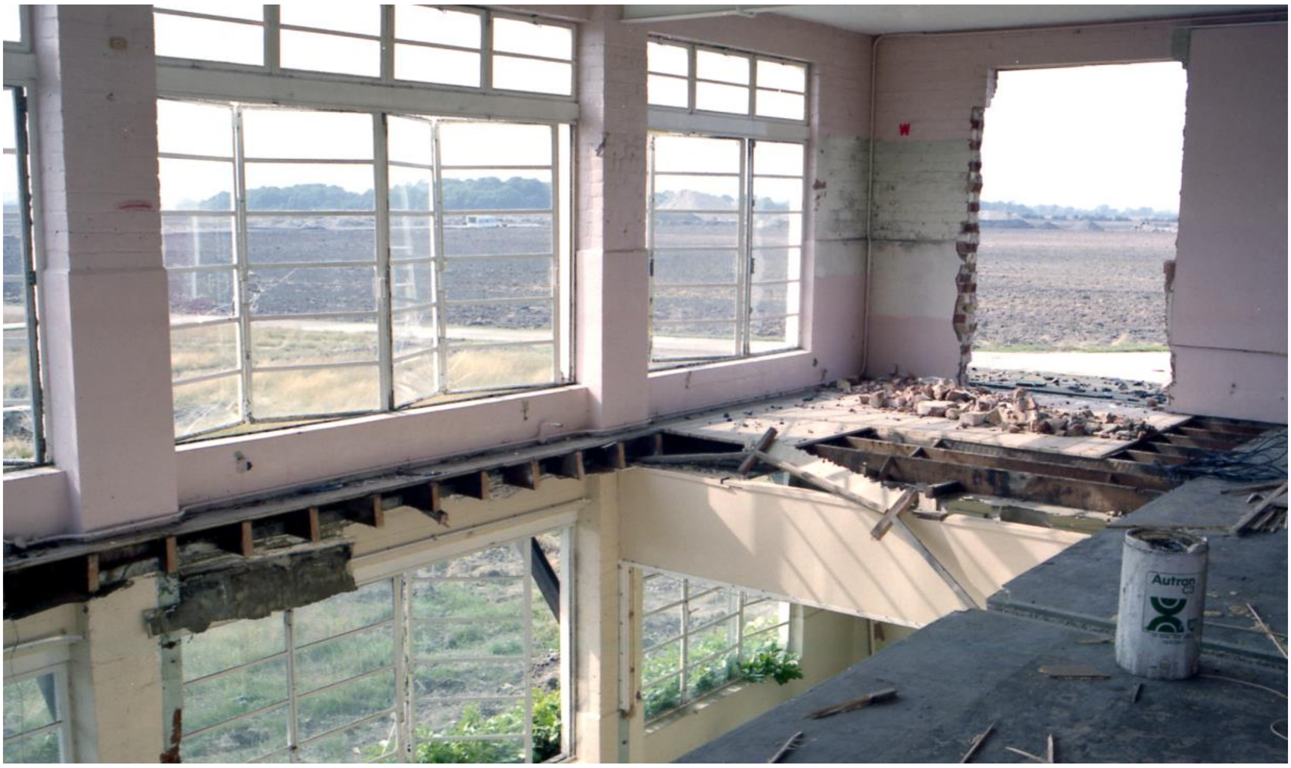
Plates 88 & 89: Goxhill (25-04-95) – demolished (dismantled and shipped to the USA)



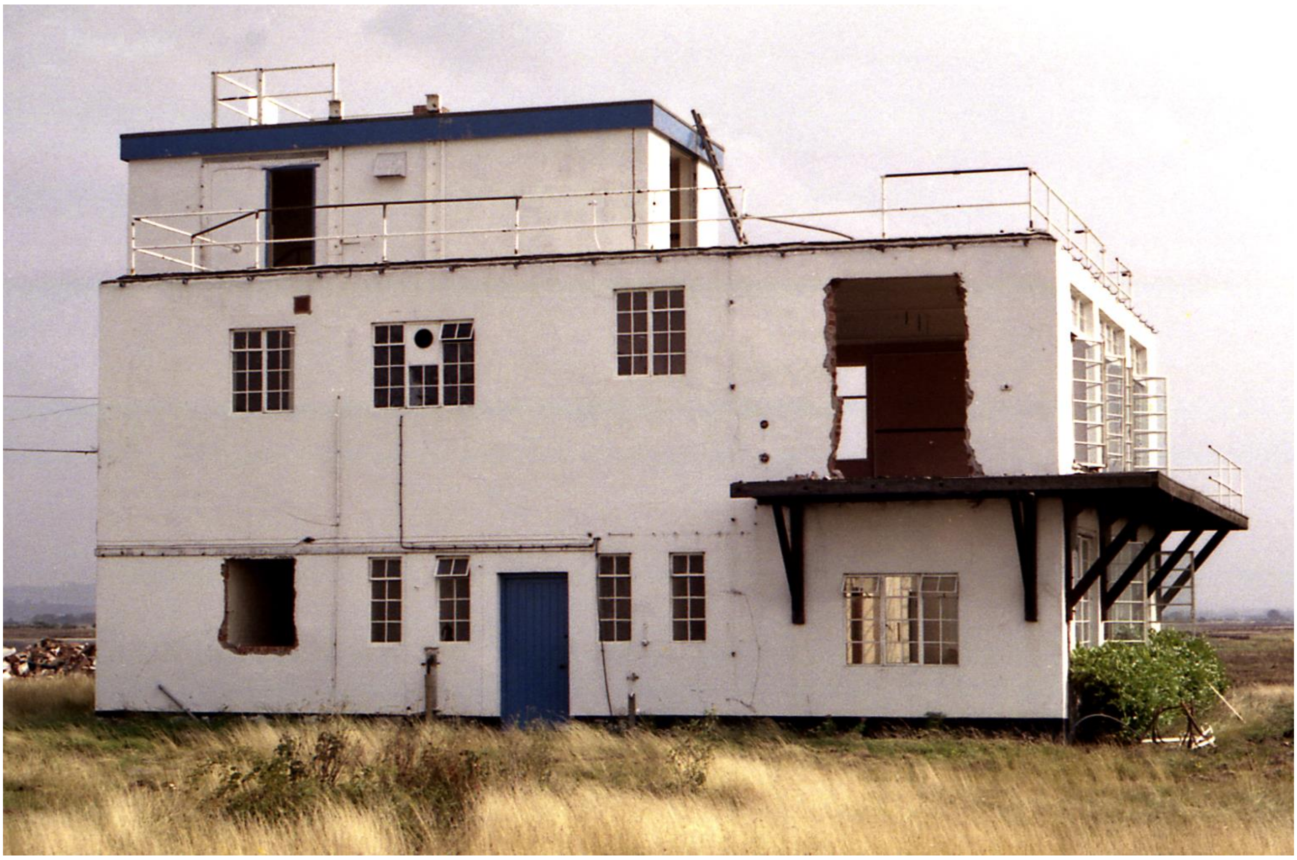


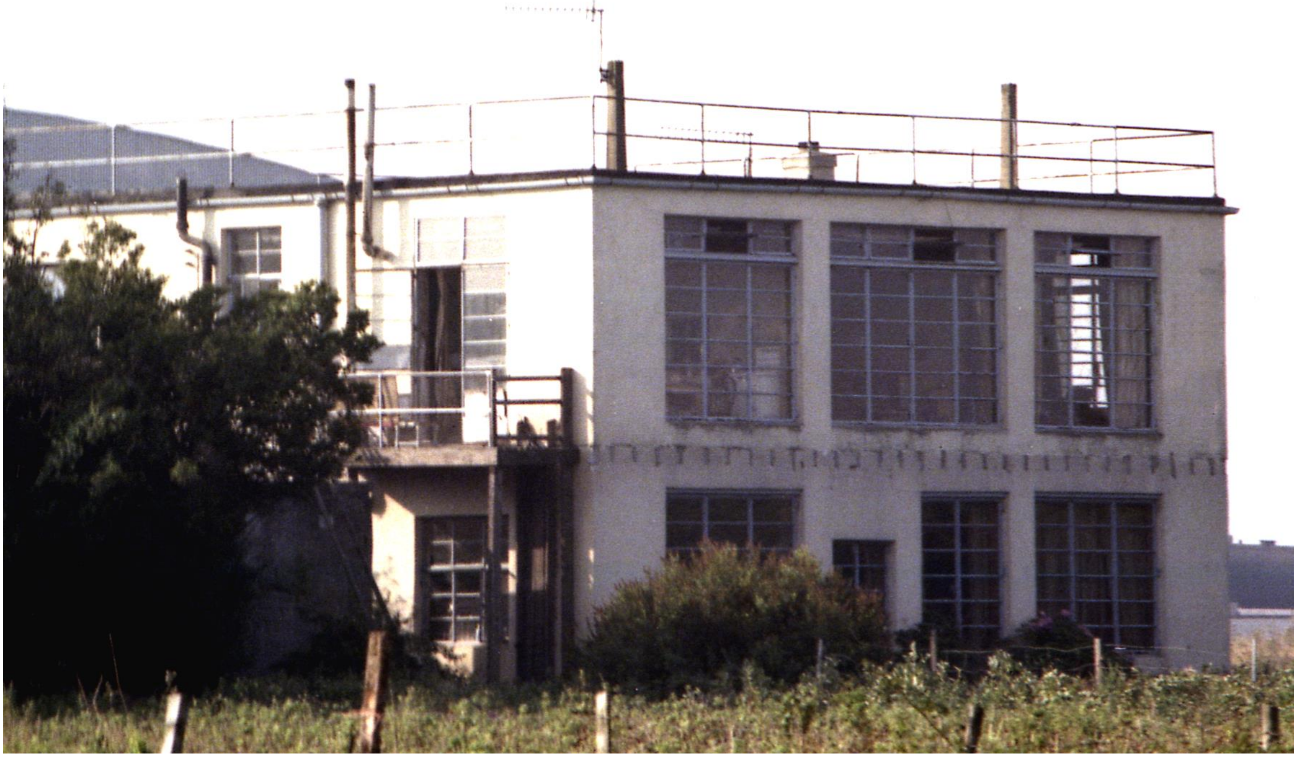
Plates 90 & 91: Holme-on-Spalding Moor (13-09-84) - demolished



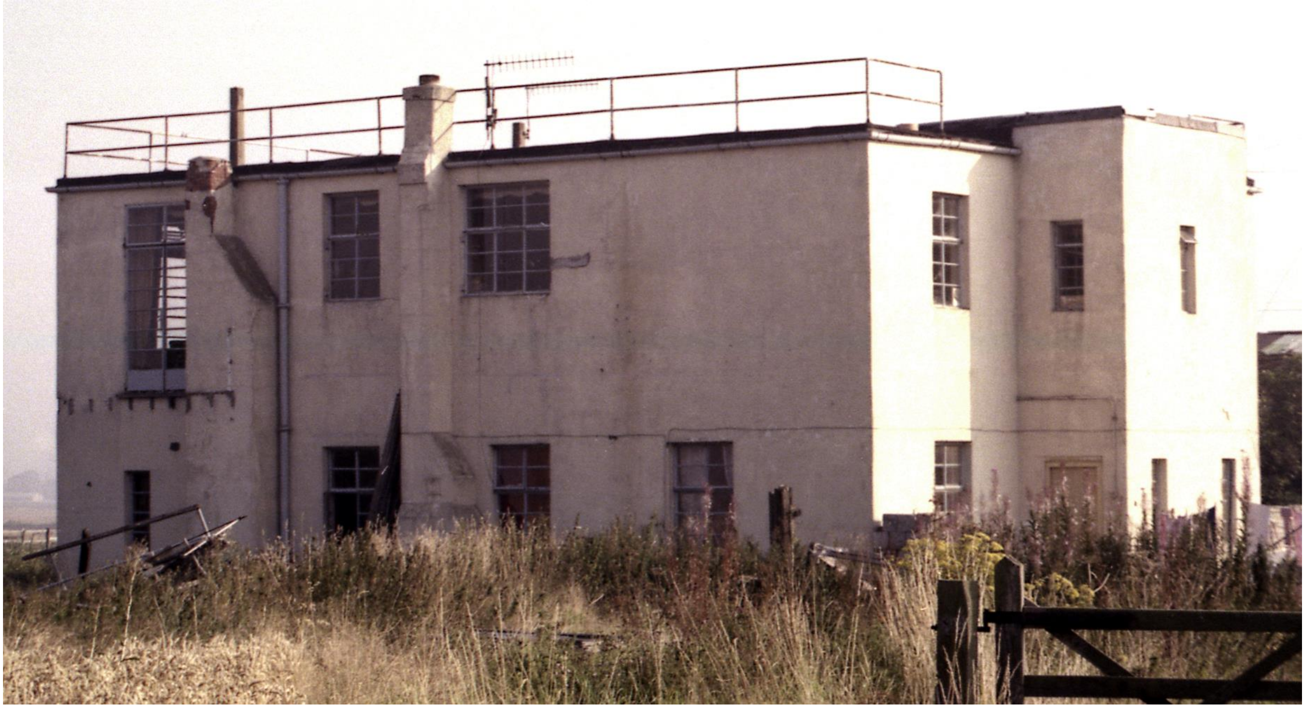


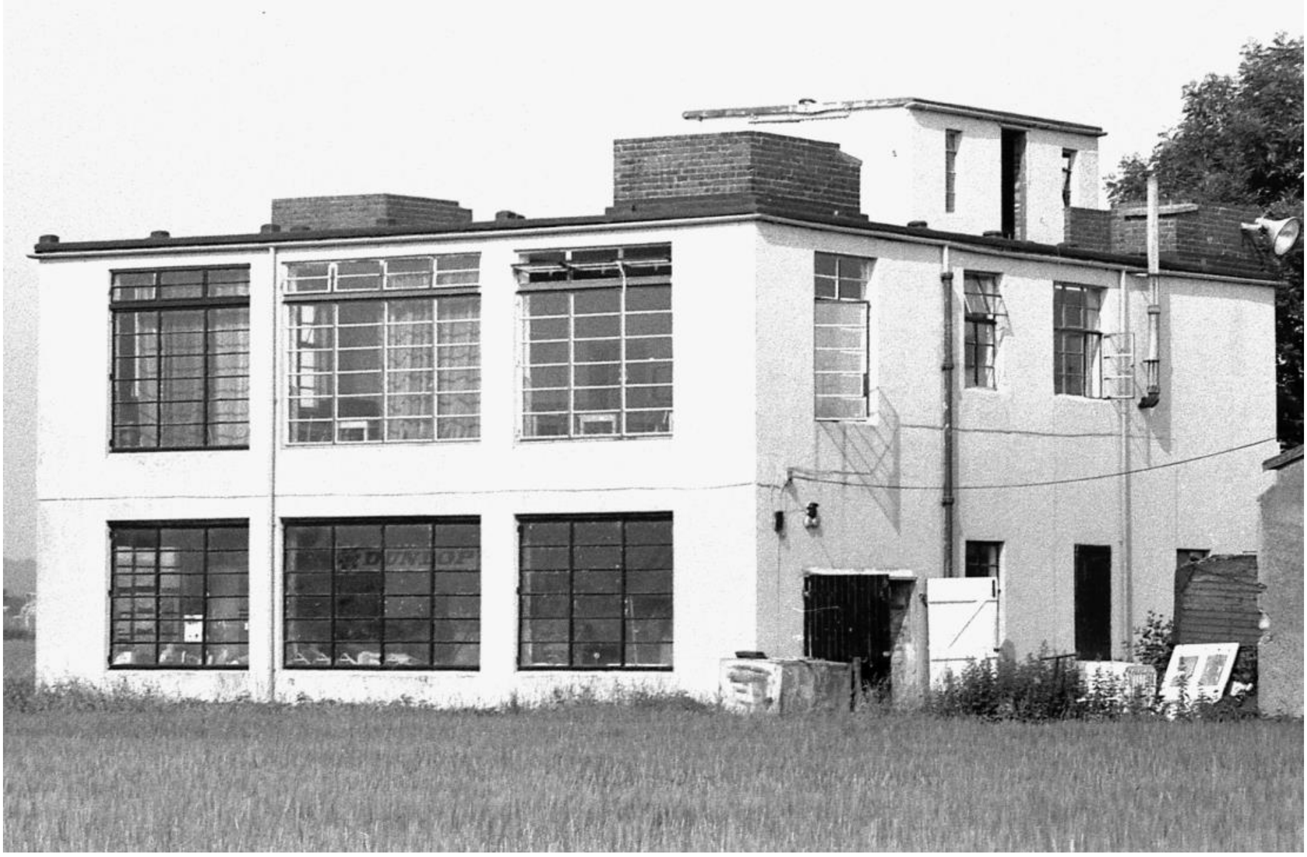
Plates 92 & 93: Holme-on-Spalding Moor (13-09-84) - demolished



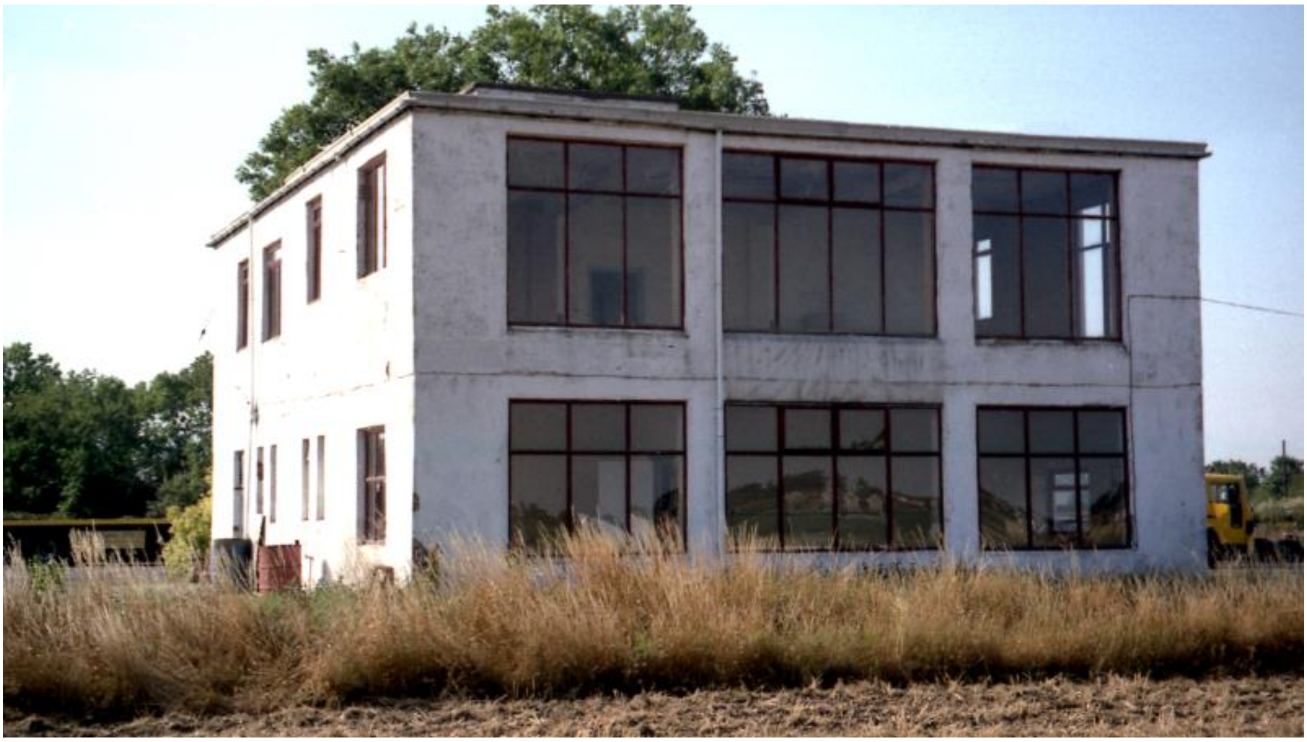


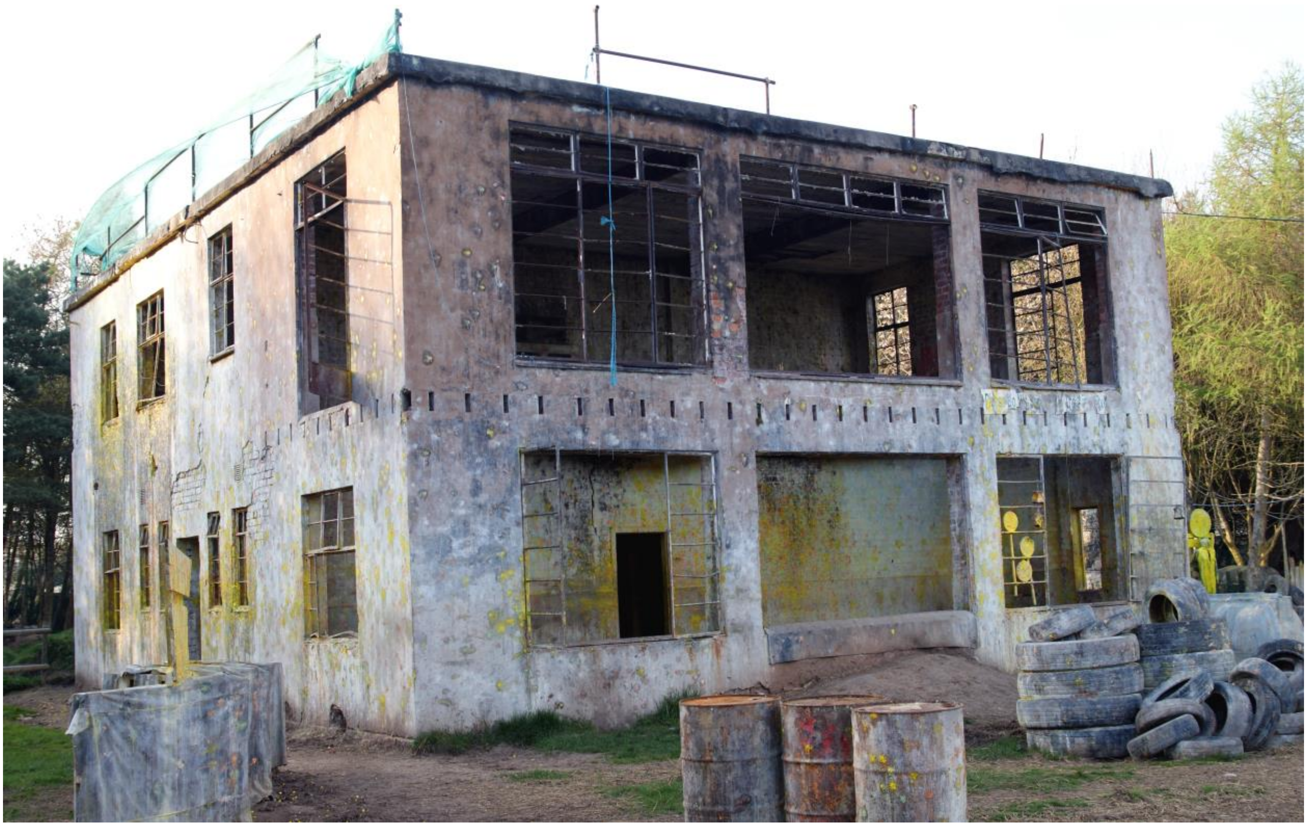
Plates 94 & 95: Honeybourne (10-06-81)



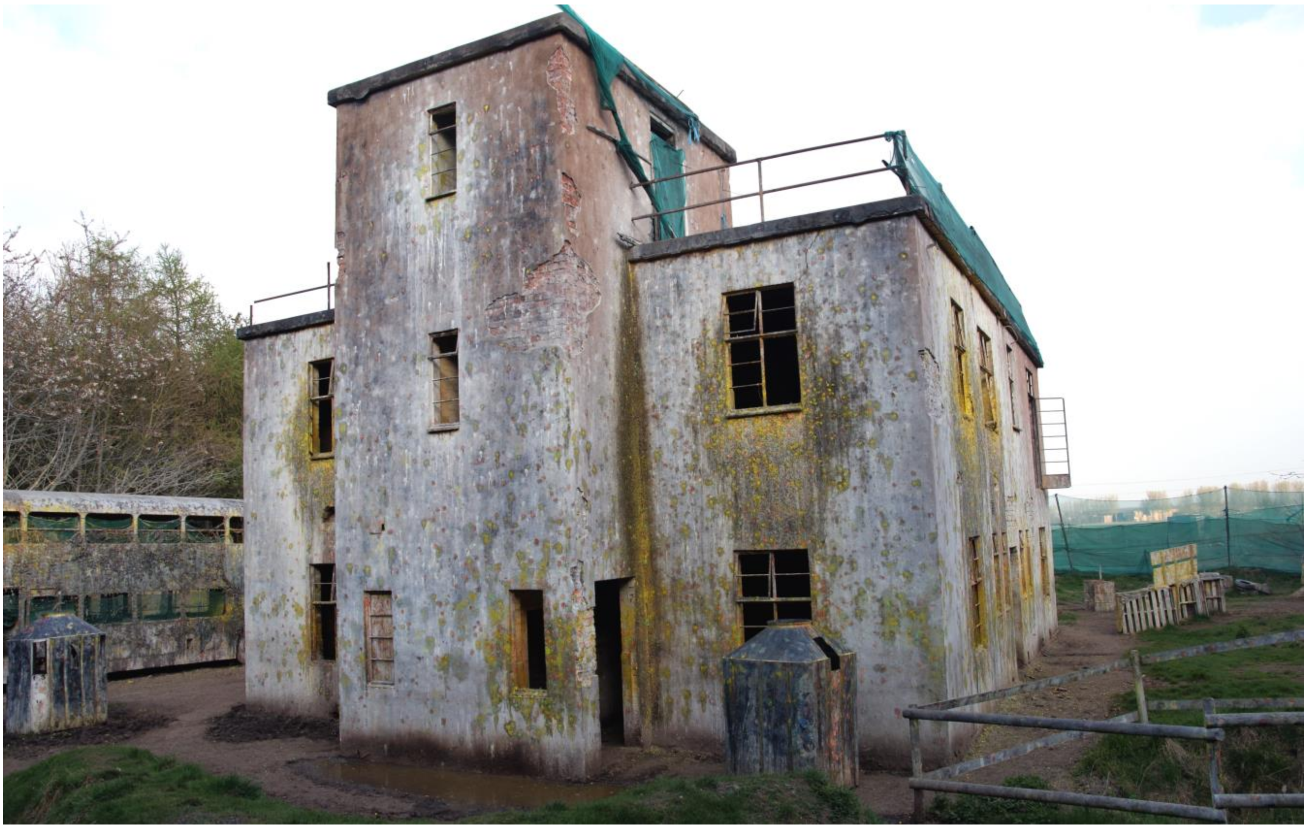


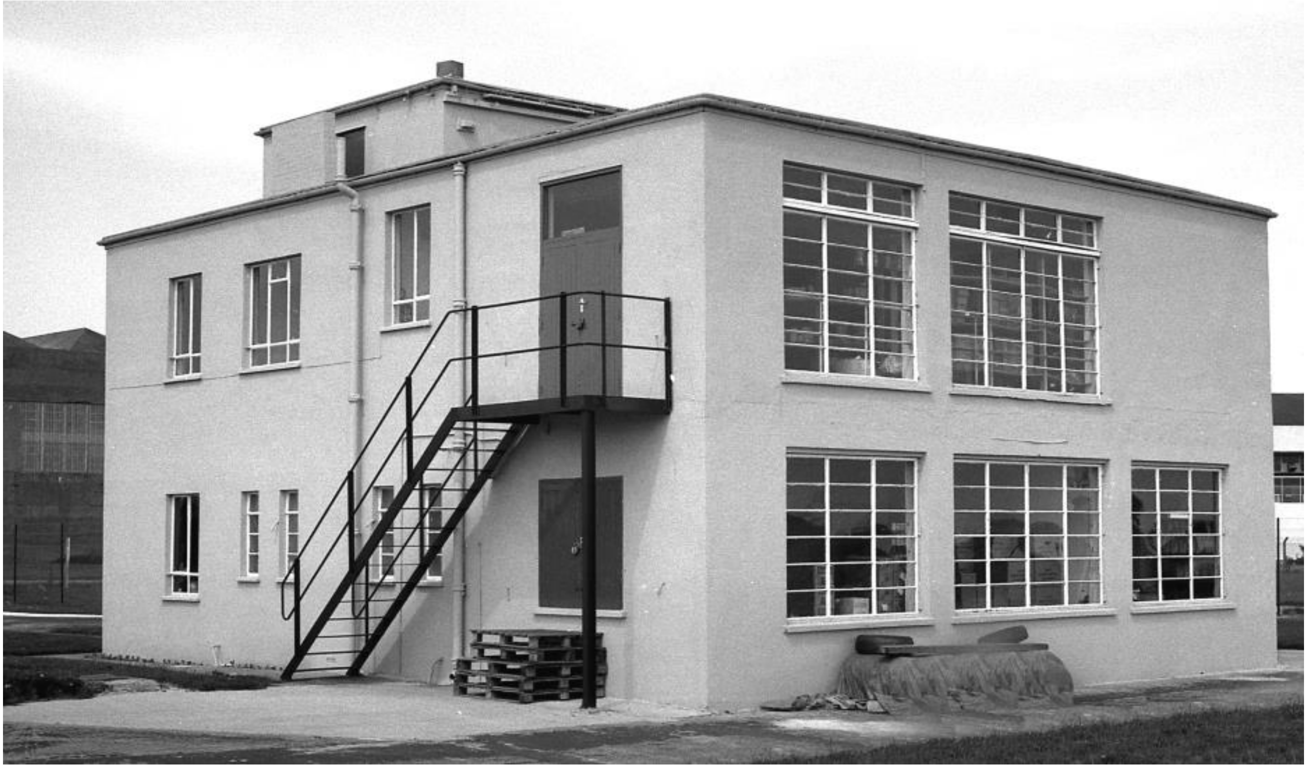
Plates 96 & 97: Marston Moor (04-07-77) (above) and (2005)





Plates 98 & 99: Rednal (13-04-10)





Plates 100 & 101: Silloth (30-05-82)